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PACIFIC PULP & PAPER INDUSTRY

Volume 4
Number 5

APRIL, 1930

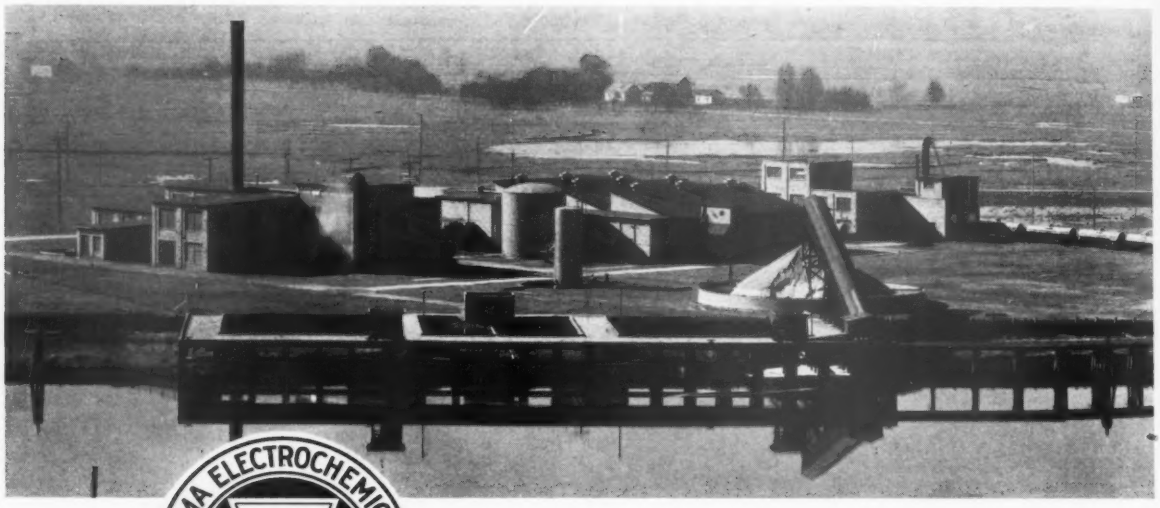
$4.00 Per Year
Single Copies, 35 Cents

Alaska Aerial Survey Exp., Navy Dept.

ALASKA

This aerial view taken along Peril Straits, Tongass National Forest, shows some characteristic pulp timber country of the Southeast Alaska panhandle. Prospects are bright for early pulp and paper mill development to tap these vast timber areas.

Liquid CHLORINE



TACOMA ELECTROCHEMICAL CO. KEYSTONE BRAND TACOMA, WASH. SUBSIDIARY PENNSYLVANIA SALT MFG. COMPANY.

Ideally Located to Render Most Efficient Service

For 80 years, since its founding in 1850, the PENNSYLVANIA SALT MANUFACTURING COMPANY has served the pulp and paper industry with chemicals of high quality. As one of the pioneer producers of Liquid Chlorine, PENN SALT has long been one of the industry's chief sources of dependable supply.

With the expansion Westward of pulp and paper making, it was a natural step for the company to extend its chemical service to embrace the Pacific Coast industry. Construction of a modern electrochemical plant at Tacoma, Washington, was completed in 1929, and from this advantageous location Liquid Chlorine is immediately available to the West Coast's pulp and paper industry.

TACOMA ELECTROCHEMICAL CO.

TACOMA WASHINGTON.

A SUBSIDIARY OF THE PENNSYLVANIA SALT MANUFACTURING CO.

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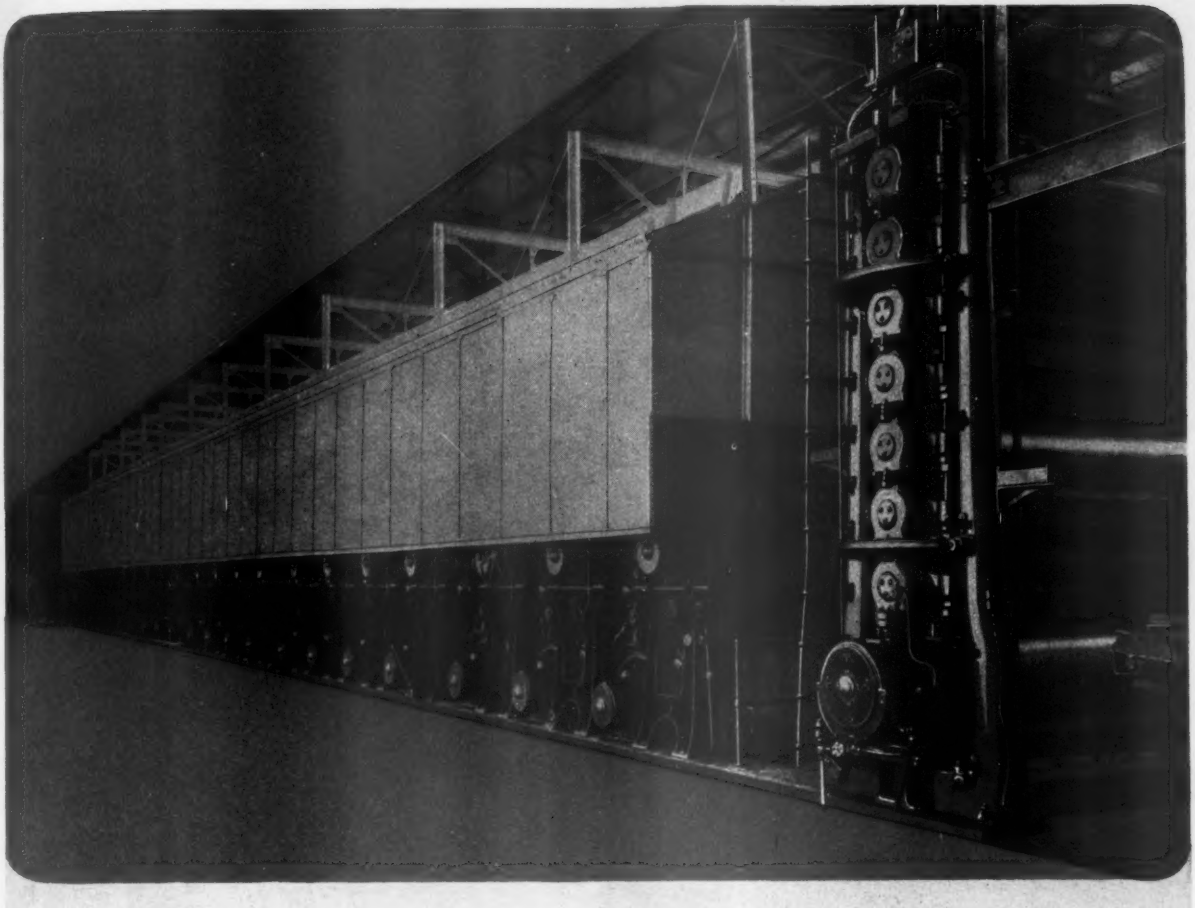


The Modern Calender

THE stacks are made of the round section, permitting greater strength and giving easy access to working parts. Calender rolls equipped with improved Beloit collar oiling bearings. A wiper wipes the oil from this collar and distributes it to all parts of bearings—the insert collar is always flooded with oil. The opening of a valve automatically releases the doctors from the rolls. Electric lift raises and lowers rolls. Leading mills have adopted the improved Beloit features. It will pay you to inquire about them.

The *Beloit* Way Is the *Modern* Way.

BELOIT IRON WORKS, BELOIT, WISCONSIN, U. S. A.

The BELOIT

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

The Old *vs.* The New

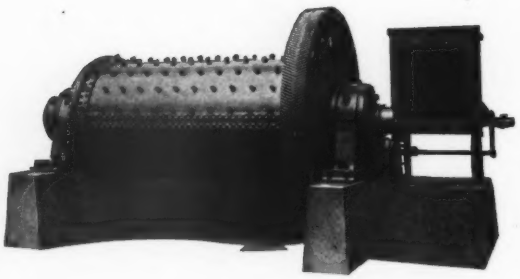
Calenders were formerly in plain babbitted bearings. Water passed around them to keep them cool. This water, however, only protected a defective bearing and when speed was stepped up, it failed to do the work after the machine passed a certain point. Today the calender rolls are supported in either enclosed collar oiling bearings or anti-friction bearings, all served by a circulating oil pump and filter.

The doctors of today are different. They have an automatic device to move them away from the rolls. The tremendous speed of the rolls with the doctor running against them today would cause them to get hot very quickly. This makes the roll change shape. When that occurs, the paper maker must spoil his doctors to heat other parts of the roll to make them correspond with the parts that are already heated, thus spoiling the doctors and injuring the rolls. Today, by simply touching a button, the doctors are moved from the rolls, the rolls warm equally all the way across and are not influenced by the doctors hanging against them.

The lifting of the rolls is done automatically with electric or hydraulic movement. The modern paper machine has reached a point where hand-power no longer need be applied.

Installation of five 6'x 12' Rod Mills grinding chestnut chips.

Utilize Wood Waste *for* Profits *by* Rod Milling



A-C Products for the Paper Mill

- **Rod Mills**
- **Electric Motors**
- **Centrifugal Pumps**
- **Texrope Drives**
- **Power Transmission Machinery**
- **Perforated Metals**
- **Thorne Barkers**
- **Power Plant Equipment:**
  - **Steam and Hydraulic Turbines**
  - **Steam Engines — Condensers**

EVERY paper mill has a certain percentage of waste material which can be profitably converted to paper stock by means of rod mills.

MANY types of liner and insulating board are being manufactured today from refuse which was previously discarded or used as fuel.

ONE of the outstanding achievements in recent years is the development of a corrugated board manufactured from chestnut wood after the by-products have been extracted.

SEVERAL installations each consisting of 5 - 6x12 direct connected rod mills are converting waste chestnut wood at the rate of 15 tons in 24 hours per mill into a high grade corrugated board at a very low cost per ton.

ROD mills can also be used successfully for beating or refining slush stock producing a superior grade of paper by this new method at very low cost.

WE believe it will be worth your while to investigate the results obtained with Allis-Chalmers rod mills. All inquiries given careful attention.

ALLIS-CHALMERS

Allis-Chalmers Manufacturing Company, Milwaukee

When 1,000 ft. of News was news!
Jan. 16, 1915
12,000 sq. ft. a minute
was the output proposed for a new Rice, Barton & Fales Machine then being tested at a mill in Maine. A sheet 12 feet wide, at the unprecedented speed of 1,000 ft. per minute!
and today...
A New Rice-Barton 124-inch Cylinder Machine

NEWS BOARD

BOOK

UNIFORMLY high quality with quantity production are required to keep up with these magazine schedules. Book paper is another product of Rice-Barton Machines designed and built to produce better sheets in less time.

Are your machines up to date? We would like to discuss new equipment or rebuilding with you.

RICE, BARTON & FALES

Incorporated

WORCESTER, MASSACHUSETTS

Paper Making Machinery Since 1837

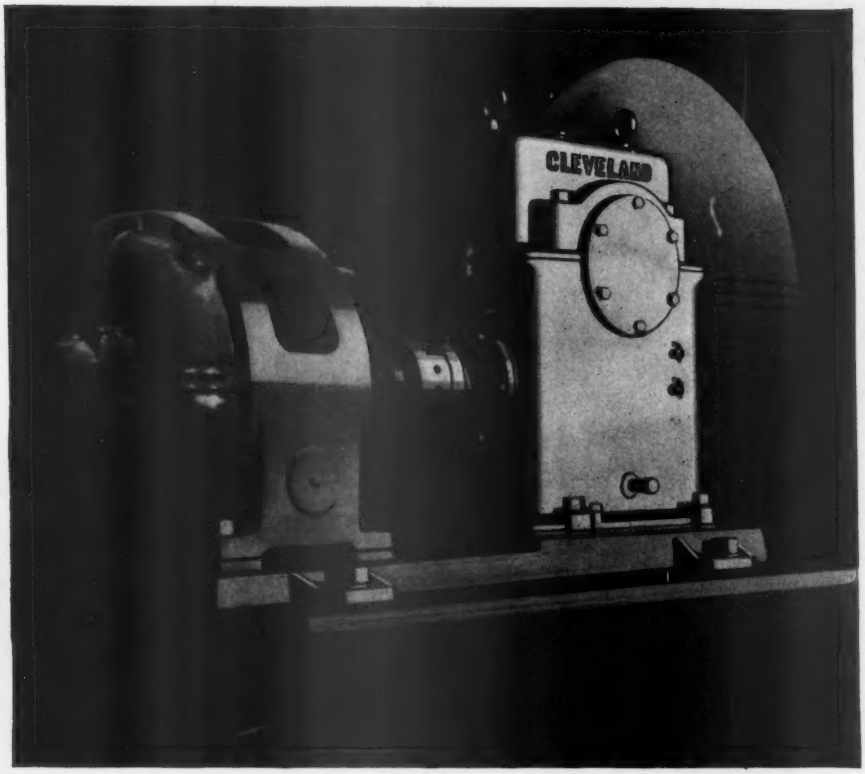
A DRIVE QUARTET THAT KEEPS MACHINES HUMMING

Four sizes of these Bagley & Sewall Drives . . . four sizes in harmony with every position on paper machines from 60" to 304" wide. Speed reducing models, too . . . and *all* identical in smooth, vibrationless, chatter-free running, velvety starting, finger tip control and space conserving compactness. All metal, precisely cut, perfectly matched gears, running in full oil bath, with splash feed that maintains a constant oil film at all contacts. Anti-friction roller bearings throughout . . . and sturdy stands that add a goodly share to masterful performance. Bagley & Sewall Drives may be installed as a complete drive system or as separate units, at any time, without interrupting production.

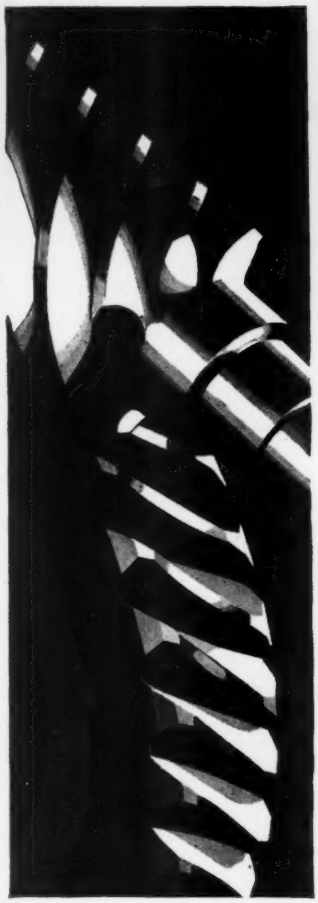
We'd like to tell you all about them—write us.

The Bagley & Sewall Co.

Watertown, N. Y.



Cleveland Type AH Unit driving sulphite agitator. Ratio 17½:1, 12 h. p., 870 r. p. m.



It is particularly significant, that of all speed reducers manufactured, only Cleveland Worm Gear Units are recommended for **EVERY** type of application. In view of this fact, prospective buyers logically conclude that Cleveland Units alone are capable of meeting any and all operating requirements . . . regardless of how unusual, or how severe these requirements may be.

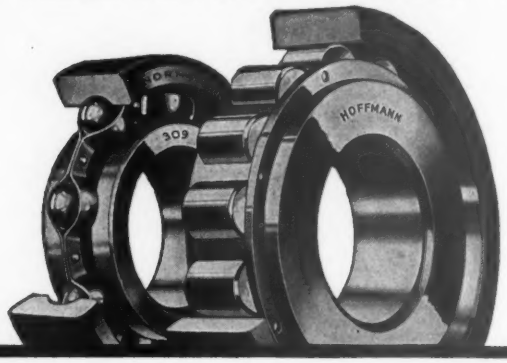
CLEVELAND

WORM & GEAR COMPANY

3257 EAST 80TH STREET . . . . . CLEVELAND, OHIO

CLEVELAND WORM GEARING · THE ULTIMATE DRIVE

When writing to CLEVELAND GEAR & WORM CO. *please mention* PACIFIC PULP AND PAPER INDUSTRY



PRECISION

... its meaning and its commercial value ...

PRECISION, as commonly used, is a term defining extreme refinement of dimension and finish. But as describing an outstanding quality of *NORMA-HOFFMANN Precision Bearings*, the word has a far more comprehensive meaning.

To Norma-Hoffmann engineers and production men, *Precision* means the ultimate in dimensional refinement. Above and beyond this, however, it means bearing design worthy of expression in a finished product of this extreme refinement—selected materials well deserving of special treatments and of highly refined machining processes—standards of production which permit no deviation from absolute uniformity, regardless of quantity.

Precision, as thus described, is the foundation quality upon which the Norma-Hoffmann reputation rests, upon which its business has been built, and upon which it must continue to grow.

But what does all this mean to the buyer and user of *NORMA-HOFFMANN Precision Ball and Roller Bearings?* What, in other words, is the commercial value of *Precision?*

Briefly stated, *Precision* stands for that combination of qualities which manifests itself in higher anti-friction efficiency, longer life, greater speedability, better performance, lower costs for replacements, increased production. These are the distinct and concrete advantages which accrue to the user of *NORMA-HOFFMANN Precision Bearings.*

Obviously, *Precision* is costly to produce and to maintain. But it has been the uniform experience of those who have availed themselves of its advantages, that its price is repaid a hundred fold in the lower after-costs which inevitably follow.

The long, varied experience of Norma-Hoffmann engineers is offered without obligation to machine users and builders facing bearing problems.

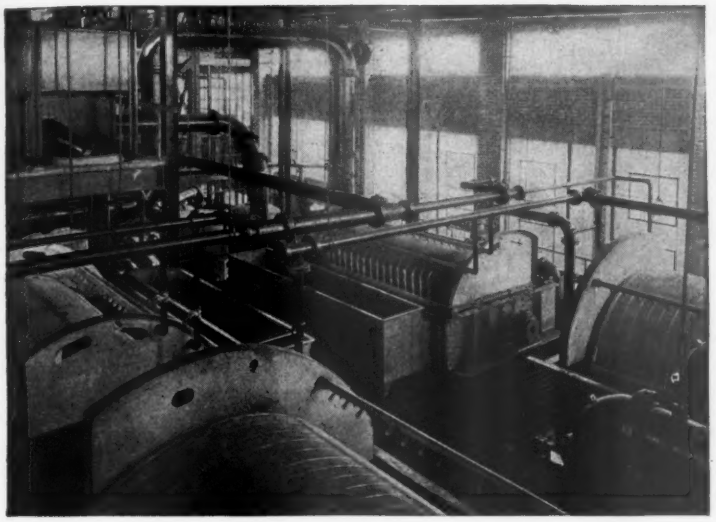
NORMA-HOFFMANN

PRECISION BEARINGS

SEATTLE:
Ahlberg Bearing Company of California, Inc., 512 East Pike Street.
PORTLAND:
Ahlberg Bearing Company of California, Inc., 409 Burnside Avenue.
SAN FRANCISCO: Irvin Silverberg & Co., 541 Van Ness Avenue.
LOS ANGELES:
Joseph A. Masterson & Co., 1822 South Hope Street.
Ahlberg Bearing Company of California, Inc., 1708 S. Grand Avenue.
PHOENIX, ARIZ.: Ahlberg Bearing Company of California, Inc.

NORMA-HOFFMANN BEARINGS CORPN.—STAMFORD CONN. U.S.A.

Proven the Ideal Combination



. . . Oliver United High Density Thickener

. . . Oliver United Bleach Washer

. . . Oliver United Lime Mud Filter

THOSE operating bleach plants will be interested in the work being done by the special Oliver United equipment for this work.

The High Density Thickeners have fully demonstrated their ability to deliver stock uniformly at any desired rating—20%, 25% or even higher. This thickened stock is delivered to bleachers or storage in condition best suited for High Density Bleaching.

The Bleach Washers have fully demonstrated their superiority over any other method. They are more compact, wash more thoroughly, and use much less water.

The Lime Mud Filters have fully demonstrated their superiority. They prepare the lime more suitably for re-burning. They recover the excess chemicals with the minimum of dilution.

Oliver United bleach plant equipment provides a definite opportunity to lower costs and improve the product. It is a sound investment for any paper mill bleaching its stock.

During the last three months of last year, 24 Oliver United Bleach Plant Units were shipped.

OLIVER UNITED FILTERS INC.

JOHANNESBURG E. L. Bateman
TOKYO American Trading Co., Inc.
MELBOURNE Fyvie and Stewart
HONOLULU W. A. Ramsay Co.
MANILA The Edward J. Nell Co.

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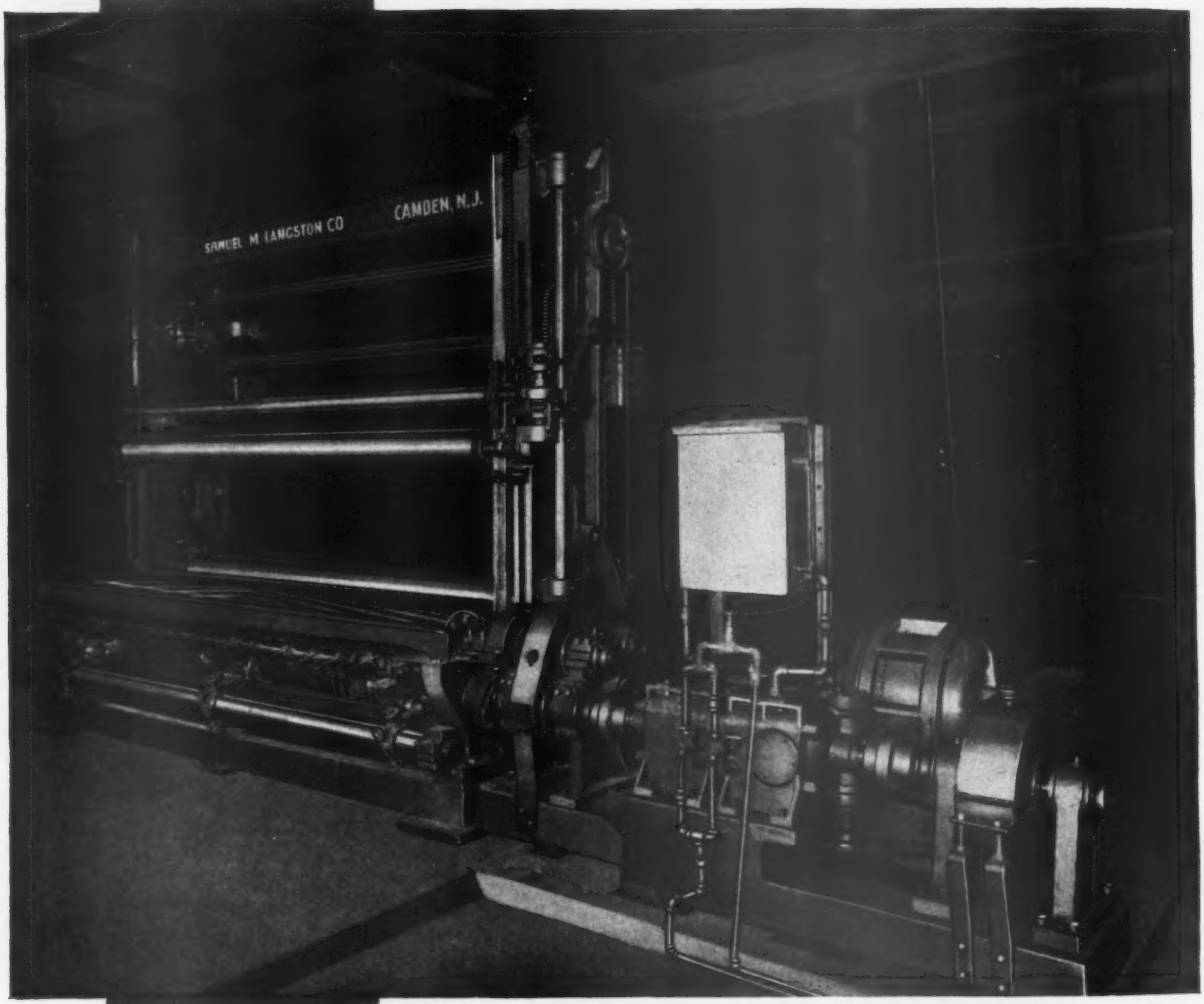
LANGSTON



SLITTERS

The heavy-duty Langston Slitter can be had in any width, to wind any diameter. Use it as a winder or as a rewinder. Speeds up to 3000 feet per minute. Makes rolls of uniform density, square-edged. Langston's Shear-Cut makes no dust—the paper is *clean-cut,* not ground apart. A catalog is yours for the asking.

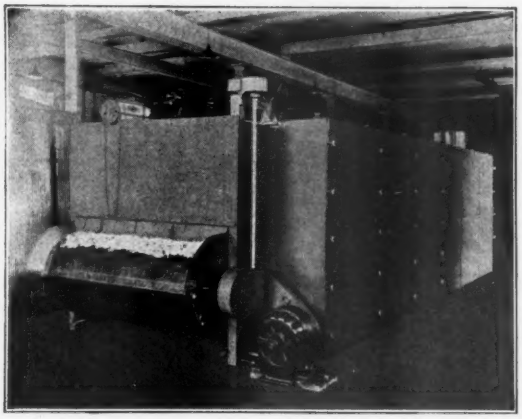
SAMUEL M. LANGSTON CO., Camden, N. J.

FIDALGO DRYING SYSTEMS

(PATENTS GRANTED AND PENDING ALL COUNTRIES)

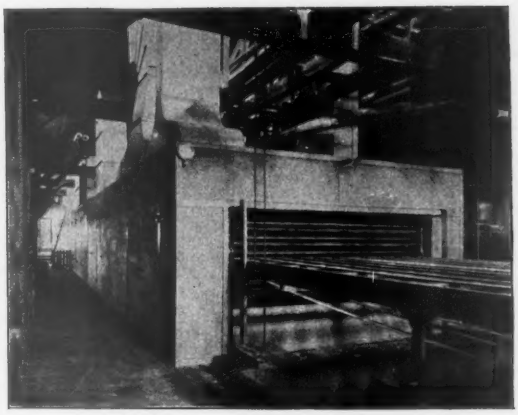
Investigate Our Installations

For PULP DRYING



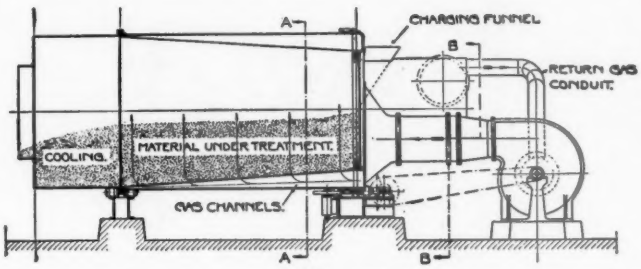
Shredded Pulp Dried With Same Strength as Wet

For INSULATING BOARD

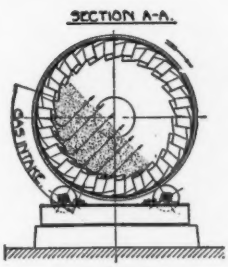


Type M Dryer—For Uniform Surface Board—High Speed Maximum Efficiency

. . . for Bark and Chips



ELEVATION



SECTION

The New "PHERSON" Rotary Dryer

Higher Efficiency—Smaller Units—Lower Costs

TECHNICAL ECONOMIST CORPORATION

122 East 42nd Street NEW YORK, N. Y.

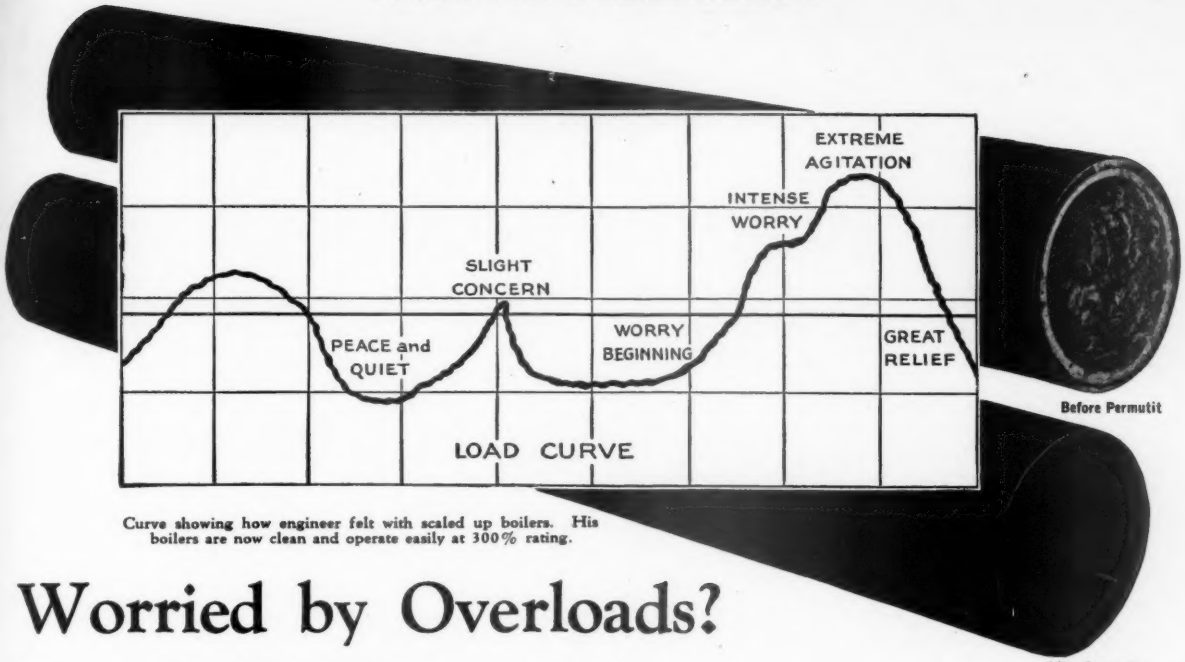
The further ahead a paper engineer is thinking, and the more he is attempting to do in the advancement of paper production, the more he insists on advanced technical cooperation—*and understanding*—on the part of his machine builders. Mere physical equipment—mere will to co-operate — are not enough. There must be *ability* to co-operate with him. And for that there must be ability to understand him;—all his aims, and all his reasoning.

Working for the Men Who Think "Furthest Back of the Decimal Point", and Furthest Ahead of Today.

Pusey and Jones

THE SIGN OF TRADE MARK SUPERIOR QUALITY

THE PUSEY AND JONES CORPORATION, WILMINGTON, DELAWARE, U. S. A., Builders of PAPER MAKING MACHINERY; for NEWS : BOOK : KRAFT : BOARD : : Working For, and in Technical Co-operation With, the Forward-Thinking Minds of the Industry : Since 1848 : The MARK, shown here, will be found on Every Casting, and on every Other Part of major Importance, in every Machine produced by This Company : : It is the Mark of Our Own Technical Standards : : A mark of Superior Quality.



Curve showing how engineer felt with scaled up boilers. His boilers are now clean and operate easily at 300% rating.

Worried by Overloads?

So was this Chief Engineer until Soft Water solved his problem

In the boiler room of an Illinois power plant are four B & W Boilers. They are rated at 440 b.h.p. each and operated at 250 per cent. rating during most of the 24 hours.

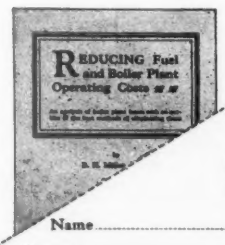
The water supply, filtered by the city, contains 10 grains of hardness per gallon which caused a hard scale to deposit in the boilers quite rapidly. Two men, working 8 hours per day, were required to turbine and clean the boilers, but in spite of frequent cleanings the boilers had to be forced to the limit to meet their loads. In fact it was often questionable whether they would be able to meet high peak demands.

The Chief Engineer knew that his boilers would meet all demands easily if it were not for the scale that formed in tubes and headers, and upon his recommendation Permutit Water Softening equipment was finally installed in 1921. The results were more than gratifying. Scale formation stopped at once, old scale dissolved and was blown off, and boiler tubes became as clean and bright as the day they were put in. It was an easy matter to operate at 300% rating and more, while cleaning was discontinued altogether. Recently the Chief Engineer wrote us as follows in part:

> "We have replaced only four tubes in the last two years. These were replaced just after putting the softener in operation. Before using the softener, would replace from twelve to fifteen tubes per year.
>
> "Before using soft watr, used 2 men 8 hours per day and cleaned and turbined each boiler each month. Have not cleaned boilers once in the past year and a half."

Thus with one move this Chief Engineer eliminated his most troublesome problem (boiler scale), he enabled his plant to meet loads far beyond anything they had carried in the past, and he saved considerable money for the owners.

There is no reason why you, too, cannot profit by the use of soft water. Let us send you a free copy of our booklet, "Reducing Fuel and Boiler Plant Operating Costs." No obligations.



The Permutit Company
440 Fourth Ave., New York

Please send me your free booklet, "Reducing Fuel and Boiler Plant Operating Costs."

Name ..... Position .....
Company .....
Address .....

The Permutit Company

Apparatus for Removing Impurities From Water

SAN FRANCISCO, 1012 BALBOA BLDG. LOS ANGELES, 909 WRIGHT CALLENDAR BUILDING

The New Williams Sheet Dryer

Dries Hand Sheets Same as Paper on Big Paper Machine

FEATURES—

1. *Electric Heat, Thermostat Control.*
2. *Sheet clamped under dryer canvas.*
3. *Drys sheet flat in 4 - 5 minutes.*
4. *Heavy polished copper top.*
5. *Large drying surface, 20x20 inches. Four 8x8-inch sheets may be dried at a time.*

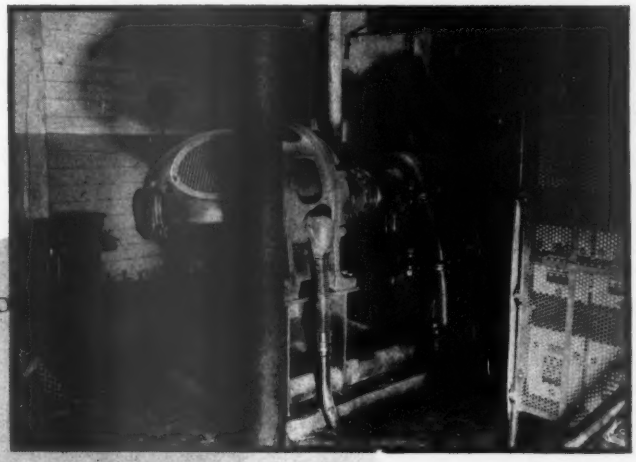
WILLIAMS APPARATUS COMPANY

WATERTOWN, N. Y.

When writing to WILLIAMS APPARATUS CO. *please mention* PACIFIC PULP AND PAPER INDUSTRY

Satisfactory in every way

--says Mr. R. O. Osborn



NEWTON FALLS PAPER CO

NEWTON FALLS
NEW YORK

August 2 1929.

Westinghouse Electric & Mfg. Co.,
Syracuse, N.Y.

Attention Mr. E.Y.Guyey:

Gentlemen:

In reply to your letter of July 27, relative to the dual frequency super calender drive which we installed last year, wish to advise that this drive has proven very satisfactory in every way.

The absence of back gearing, belts and clutches has reduced maintenance to a negligible factor and the ease of operation has increased production.

The gradual deceleration has also reduced breakage to a minimum and were we installing additional calenders we would not consider any other type of drive.

Yours truly,

NEWTON FALLS PAPER COMPANY.

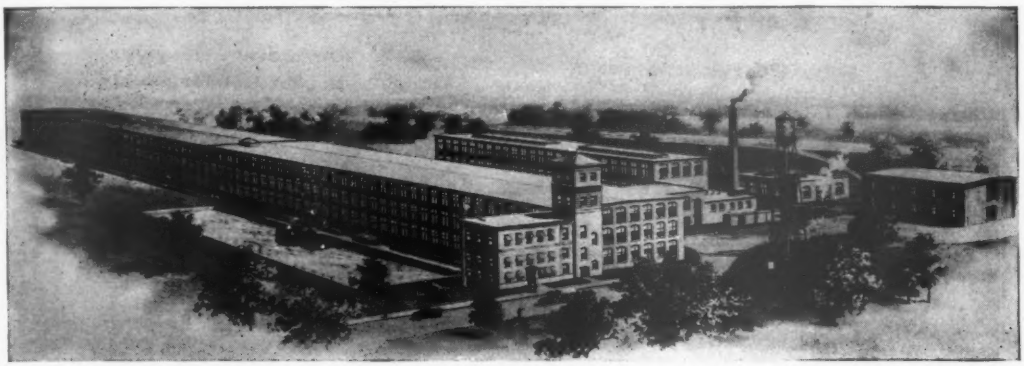
R.O.Osborn
Electrical Engineer.

We shall be glad to show you how to increase production and reduce maintenance costs with the Westinghouse Dual-Frequency Super-Calendar drive.

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

T 31028



THE HOME OF ALBANY FELTS

Results Command Attention

GOOD BOARD is not made by accident. It is the result of attention to details. One important detail is the felt.

Without the proper Top and Bottom Felts the board gets away to a bad start, and is handicapped all the way through to the finished product.

A fast-running board machine of today cannot operate successfully with "any-old-felt." It needs Tops and Bottoms designed to meet its individual requirements. Special wools to give added strength, special weaves to permit ample water removal without interfering with finish. Everything must be *carefully balanced.*

The results modern and progressive board mills are securing from Albany Felts deserve your attention.

ALBANY FELT COMPANY ALBANY NEW YORK

When writing to ALBANY FELT CO. *please mention* PACIFIC PULP AND PAPER INDUSTRY

OUT OF THE STICKS

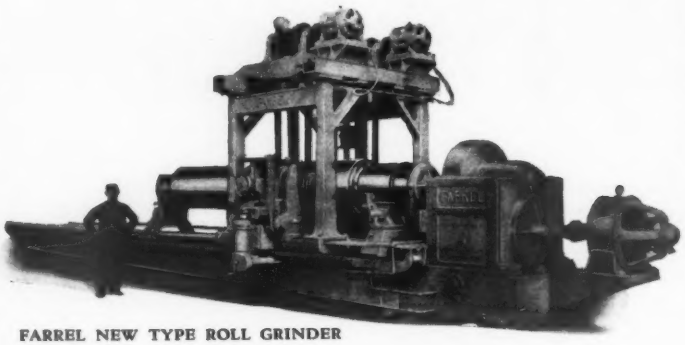
MEN WITH THE VISION AND COURAGE OF PIONEERS HAVE PENETRATED THE TIMBERED WILDERNESS OF THE WEST. IN A BRIEF SCORE OF YEARS THEY HAVE BROUGHT THE PACIFIC COAST PULP AND PAPER INDUSTRY "OUT OF THE STICKS", TO STAND AS A VITAL PART OF THE NATION'S INDUSTRY.

TO SUPPLY CHLORINE, A VITAL FACTOR TO THE INDUSTRY, GREAT WESTERN ELECTRO-CHEMICAL COMPANY WAS FOUNDED IN 1916. TO THE SUCCESS AND SUPPORT OF THE FIRST PULP AND PAPER MILLS, GREAT WESTERN OWES ITS OWN GROWTH AND PROSPERITY. FOR THEM GREAT WESTERN CONTINUES TO PROVIDE PRODUCT AND SERVICE OF UNFAILING RELIABILITY.

GREAT WESTERN ELECTRO-CHEMICAL COMPANY

SAN FRANCISCO
PLANT: PITTSBURG, CALIF.
SEATTLE: 514 FOURTH AVENUE

FARREL
REG. U.S. PAT. OFF.

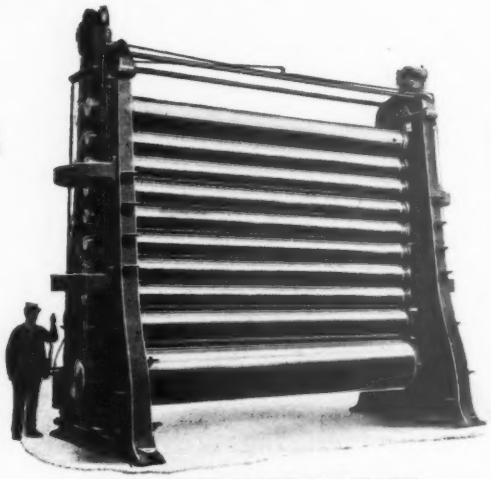


FARREL NEW TYPE ROLL GRINDER

FARREL NEW TYPE ROLL GRINDER is made in 24", 32", 36" and 42" sizes, all electrically driven throughout and fitted with Geared Head, Automatic Lubricating System and combination Swing Rest and Crowning Device, which provides for greater accuracy and faster grinding with a minimum expenditure of time and labor.

FARREL CALENDERS

are made with
HYDRAULIC
ELECTRIC
or
RATCHET
LIFT
all operated
from the floor.



178" STACK WITH HYDRAULIC LIFT

FARREL CALENDER ROLLS

are made in
all sizes up
to and including

298"

on the face.

The **FARREL** Indicating Roll Caliper is a precision instrument of very light weight, with which rolls can be calipered to the end of the face without reversing the instrument. Only two adjustments are necessary in changing from one diameter roll to another. Moves freely along the face of the roll and shows the slightest variation in the diameter at any point.

FARREL Products for the paper mill are favorably known all over the world. There are more FARREL rolls in use in this country than all other makes combined.

FARREL INDICATING ROLL CALIPER

FARREL-BIRMINGHAM COMPANY, INC.

ANSONIA, CONN.

Successors to: Farrel Foundry & Machine Co., Ansonia, Conn., Est. 1848. Birmingham Iron Foundry, Derby, Conn., Est. 1836.

Peck Carrier

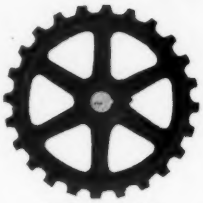
SS–850 Chain for suspending and operating barking drums

"C" Class Combination Chain

"400" Class Chain

"RC" Class Chain for power transmission

Belt Conveyor



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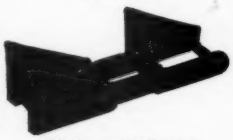
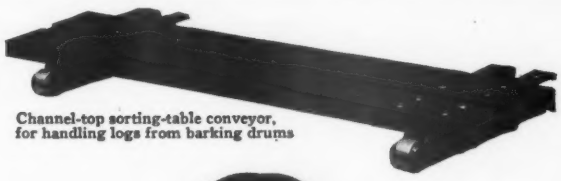


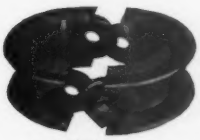
"S" Spur attachment

Friction Clutch

Plain Bearing



Channel-top sorting-table conveyor, for handling logs from barking drums



Malleable Iron Safety Collar

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Grease Cup

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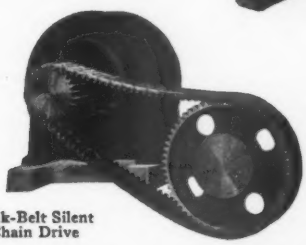
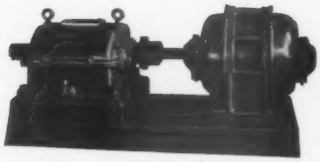


Link-Belt Silent Chain Drive

Link-Belt Crawler



Link-Belt Herringbone Speed Reducer (Sykes tooth form)

Chain Conveyor handling logs

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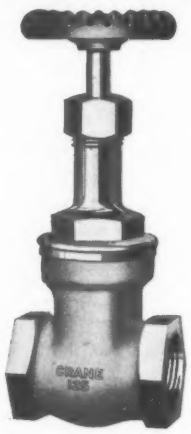
Users' demands built this valve



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So, in every detail, this brass gate valve No. 431 is planned to give unsurpassed service on lines carrying not more than 125 pounds steam working pressures.

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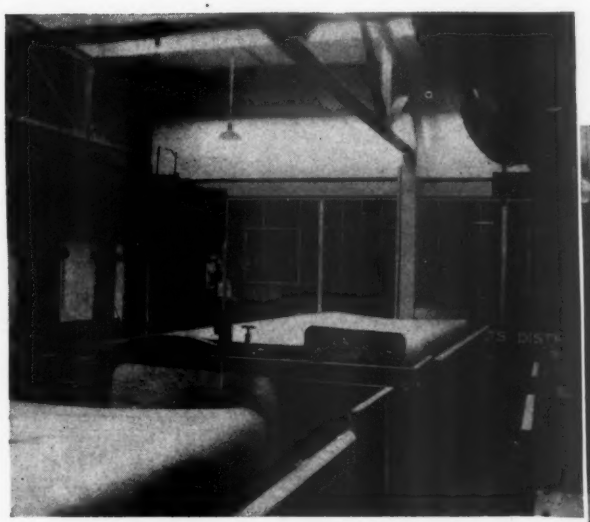
SEATTLE, WASHINGTON

Manufacturing and Engineers of Conveying, Screening, Elevating and Transmission Machinery

FEINC Deckers So Successful at Mersey Paper Company that

Another New Mill in Maine Purchased

8 GROUND WOOD DECKERS and 2 SULFITE-WHITE WATER SAVEALLS



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BECAUSE you are not familiar with

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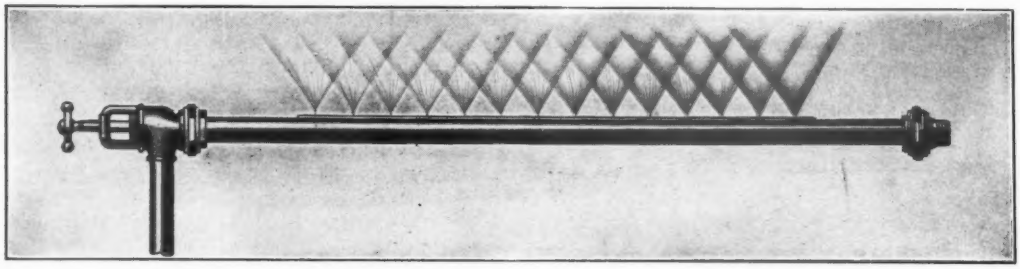

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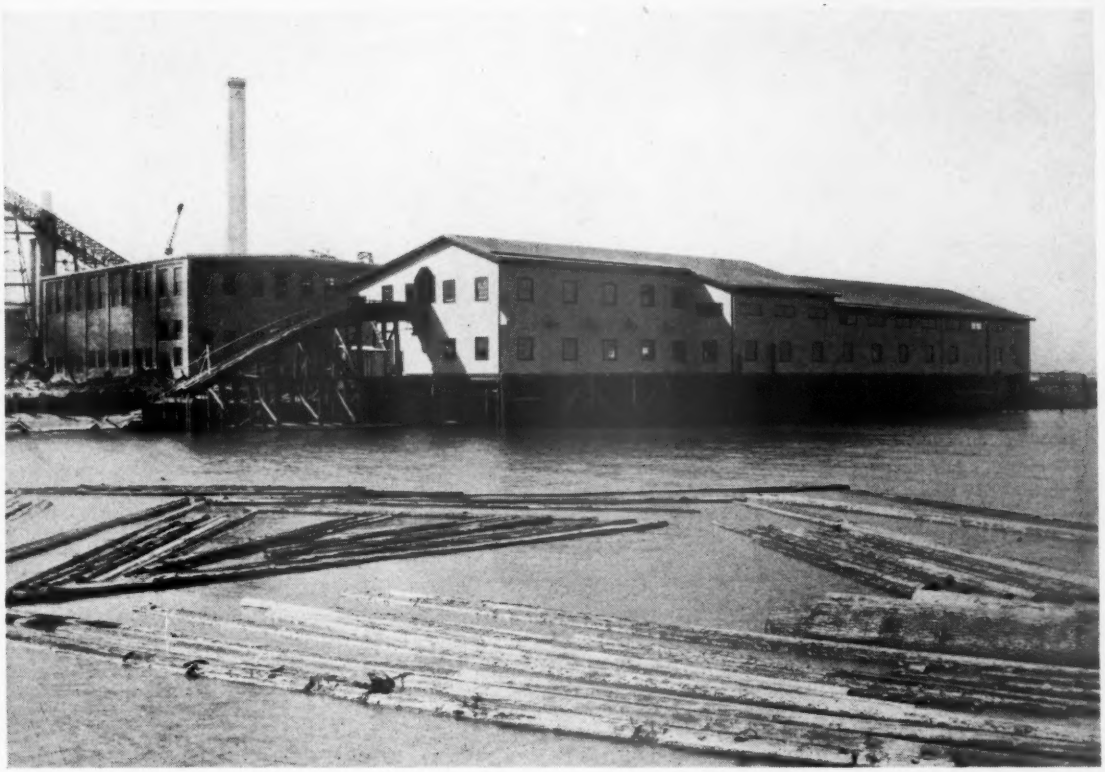

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THE PACIFIC COAST JOURNAL FOR PRODUCERS, CONVERTERS, AND DISTRIBUTORS OF PULP, PAPER, AND BOARD.

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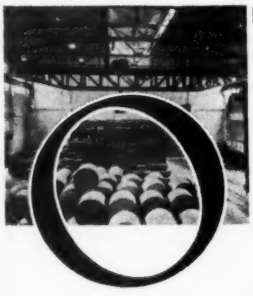
Pacific Section of

T·A·P·P·I

Convenes at Longview for a successful

Spring Meeting



ONE perfect spring day, offered it seemed as a very special dispensation for the visitors, contributed handsomely to the unqualified success of the first spring meeting of the Pacific Section of TAPPI (Technical Association of the Pulp and Paper Industry) held at Longview, Washington, Saturday, April 5. It was only the second regular program meeting of the young Pacific Section, but it was perhaps even more successful than the Section's very first meeting, held last October 5 at Tacoma, Washington.

The full and diversified program was adhered to with the single exception of one paper, and that skip was due to the unexpected absence of the author. The technical papers drew a really interested audience, and altho the afternoon program did not wind up until about 6 p. m., there were mighty few desertions from the auditorium, which is simply another way of saying that the papers were full of interest.

Quite a few of the delegates came in on Friday evening and lobby gossip was floating around in good natured fashion from early in the evening until long past midnight as old acquaintances got together and talked it over. Saturday morning the delegates began arriving early and the lobby of Longview's fine Hotel Monticello began to be a bustling place with conversation buzzing with many words that set down the paper and pulp man apart from his fellows. Shop talk.

The morning broke bright and clear, a wonderful spring day, soft, warm, a special dispensation it seemed to the TAPPI members. As had been planned a tour was organized at 10 a. m. and the delegates and their wives and ladies were escorted by guides thru the mills of the Longview Fibre Co. and the Long-Bell Lumber Co. The visiting parties were split into two groups for convenience and half went to each institution, and after spending an hour in one mill went to the other. The tours were conducted by guides supplied by the two companies. The mill town also afforded an excellent opportunity for the visitors to view the huge new steel bridge, which only the week before was completed across the mighty Columbia River.

By noon the bulk of the delegates had arrived. There was no formal luncheon, but the visitors drifted off by two and threes and larger parties to little informal lunches.

The afternoon, given over to the reading of technical papers, found the delegates assembled promptly at 2 p. m. in the auditorium of the Longview Public Library, a fine building for a city the size of Longview. An ideal room for the purpose, many said.

Robert S. Wertheimer, chairman of the Pacific Section of TAPPI and resident manager of the Longview Fibre Co., presided at the afternoon meeting.

J. D. Tennant, vice-president and general manager of the Long-Bell Lumber Co., gave the address of welcome. He said he favored the ideas of mill tours in the morning, because when you got the delegates a bit tired they were only too glad to sit down to an afternoon of papers. He said he was happy to have the visitors tour Long-Bell's big sawmill and see it in operation as an important feeder to the pulp mill.

Dr. H. K. Benson, secretary of the Pacific Section, and Dean of the College of Chemistry and Chemical Engineering, University of Washington, made the response to Mr. Tennant's welcome. Dr. Benson at the same time discussed briefly the future course of TAPPI and the outcome of the executive meetings held in New York

A group assembling to tour the plant of the Longview Fibre Co. R. S. Wertheimer, resident manager, is seen in the right foreground talking to Superintendent W. G. Brown of the Inland Empire Paper Co.

with the national officers of TAPPI on the occasion of the recent annual convention in New York.

The executive committee had, in order to assist creation of the Pacific Section, made some changes to permit creation of regional bodies. Briefly, the Pacific Section is to be permitted special by-laws; it includes automatically all TAPPI members of the national body whose residence is in the Pacific Coast area, and lastly, a special class of affiliated membership is to be created. Qualifications for this class of membership are to come up for final discussion at the fall meeting.

The Pacific Section is to have 10% of the dues paid by members into the national treasury rebated for the use of the Section.

Further, in order that the Pacific Section may feel that it is working hand in hand with the national organization, it is probable that each of the several committees of TAPPI, working on such fundamental problems as Paper Testing, Training for the Industry, Physical Standards of Pulps, and other subjects will have one Pacific Section member. This Pacific Section member is in turn to be automatically the chairman of a sub-committee within the Pacific Section to carry out regional work on the committee's subject.

Following Dr. Benson's remarks the program began with a discussion on "Keeping Oregon Streams Reasonably Clear" by Carl E. Green, Oregon State Sanitary Engineer. Mr. Green touched on methods for determining the degree of pollution, the several types of industrial pollution, the types of laws needed to correct some conditions, and modern methods of financing sewage disposal.

The complete program is presented elsewhere in this issue and several of the papers delivered are either reproduced in full or in the abstract. Others are to be presented in the next (May) number of PACIFIC PULP & PAPEP INDUSTRY, for the particular bene-

A group assembling to tour the Longview Fibre Co. mill. Longview's office manager, L. C. Peabody, in right foreground facing camera, busy welcoming visitors.

PROGRAM OF THE SPRING MEETING OF THE PACIFIC COAST SECTION OF T. A. P. P. I., HELD AT LONGVIEW, WASH., APRIL 5, 1930

Chairman ..... R. S. Wertheimer
Vice-Chairman ..... Ralph Reid
Secretary ..... Dr. H. K. Benson

Address of Welcome—
By J. D. Tennant,
Vice-President and Gen. Mgr., Long-Bell Lumber Co., Longview, Washington.

Response to Address of Welcome—
By Dr. H. K. Benson,
University of Washington.

Keeping Oregon Streams Reasonably Clean—
By Carl E. Green,
State Sanitary Engineer,
Portland, Oregon.

The Forestry Program of a Lumber Company in Southwestern Washington—
By J. B. Woods, Chief Forester,
Long-Bell Lumber Co.,
Longview, Washington.

Water Supply Problems in the Pulp and Paper Industry—
By Dean R. G. Tyler,
University of Washington.

Difficulties the Printer Experiences Through Faulty Paper—
By Ralph H. Mort,
Metropolitan Printing Co.,
Portland, Oregon.

Effect of West Coast Wood Pulp Manufacture on the Process Industries—
By Dr. Paul D. V. Manning,
San Francisco, California.

Logging Waste: A Challenge to the Pulp Industry of the Douglas Fir Region—
By Allen H. Hodgson of
U. S. Forest Service,
Portland, Oregon.

The Manufacture of Liquid Sulphur Dioxide and Its Use in the Pulp and Paper Industry—
By R. Leonard Hasche,
Chemical Engineer, Research Department of American Smelting & Refining Company.

Cooking of Finely Divided Fir Wood in Sulphite Acid—
By Prof. W. L. Beuschlein,
University of Washington.

The Chlorination Process for Refining Pulp Mill Screenings and Raw Cooked Fibres—
By C. A. Newhall,
Seattle, Washington.

Some Aspects of Record Keeping—
By L. C. Peabody,
Office Manager, Longview Fibre Co.,
Longview, Washington.

Contributions of Colloid Chemistry to the Pulp and Paper Industry—
By Dr. Leo Friedman,
Department of Chemistry,
University of Oregon.

The Relationship Between the Technical Man and the Mill Superintendent—
By W. G. Brown, Superintendent,
Inland Empire Paper Co.,
Millwood, Washington.

The program was printed on a sample of .016 caliper kraft board made entirely of fir pulp at the Longview Fibre Company plant at Longview, Washington.

Some of those who attended the first annual spring meeting of the Pacific Section of TAPPI held at Longview, Washington, Saturday, April 5. The Section officers are seen in the foreground. Chairman R. S. Wertheimer is standing on the first step in the center. Standing on the same step and at his right is Secretary H. K. Benson, and standing just behind and between these two is Ralph Reid, Vice-Chairman. With this for a starter, the reader is left to his own devices.

fit of those who may wish to review the discussions more fully.

As previously remarked the program was carried out with dispatch and with the single omission of the paper by Charles A. Newhall on "The Chlorination Process for Refining Pulp Mill Screenings and Raw Cooked Fibres." Mr. Newhall was unable to attend but wired his regrets and was represented by Earl Thompson of the Great Western Electrochemical Co.

Pittock Leadbetter (left), Columbia River Paper Mills. poses with Myron W. Black, Inland Empire Paper Co.

The range of the program covered a well diversified group of subjects, the intention of the program committee having been specifically to avoid splitting hairs on subjects only within the industry. Therefore there were excursions afield, in these papers, going into the problems of wood supplies and forestry, stream pollution, water supplies, the troubles of the printer, some university research, some commercial research, and the office records. If any criticism is to be made of the program it can only be on the score of attempting to cover too much ground in a single afternoon, and certainly not on the score of the interest in the papers.

Ralph H. Mort of the Metropolitan Printing Co. of Portland, apologizing for his 18 years (in)experience as a printer, managed to draw a lot of humor from the crowd by his droll presentation of the "Difficulties the Printer Experiences Thru Faulty Paper." He touched on such troubles as soft rolls, saw-edged stock, static, watermarks, porosity and opacity.

Dr. Paul D. V. Manning of San Francisco, a consultant well versed in the chemical and metallurgical field, in his paper sketched in most interesting fashion the community of interests between industries and the magnitude of development which usually grows about an industry in affiliated lines, but which is all too often overlooked in too close attention to the immediate work at hand. He said that the producers of pulp products were just beginning to appreciate the magnitude of their field, and did not know to what ends it might lead with the development of new products such as rayon, lacquers, etc. He stressed the need for cooperation within the industry and with other industries.

Leonard Hasche had a somewhat detailed paper telling of the efforts of the research department of the American Smelting & Refining Co. to find an outlet for smelter wastes by producing liquid sulphur dioxide which might be used by the pulp and paper industry. His paper was somewhat a practical application of the cooperation between industries referred to in the previous paper by Dr. Manning.

The man in the mill who frets about having to fill out endless reports for which he can see no reason was given an insight into the underlying reasons in the discussion by L. C. Peabody, office manager of the Longview Fibre Co. on "Some Aspects of Record Keeping". Mr. Peabody stressed the need of understanding between office and mill force, and the simplification of records to the utmost without the sacrificing of needed information. The records are to afford a quick and accurate picture for the executives, he pointed out.

The final paper of the afternoon, by Superintendent W. G. Brown of the Inland Empire Paper Co., Millwood, Wash., was held over to the evening banquet session. Being a discussion from the viewpoint of the practical man on the changes being effected by the rapid introduction of affairs technical in the industry, Mr. Brown's paper was a most human document on a very real state of affairs. It was most heartily applauded.

The evening banquet, originally scheduled for 6:30 p. m., was postponed to 7:30 due to the late closing hour of the afternoon session. About 115 delegates and ladies attended. It was a joyous occasion with rival groups bursting into song and a general good natured hilarity prevailing. The banquet was very much like the similar occasion at the fall meeting at Tacoma and with about the same number of attendants. Scott Henderson, Tacoma attorney, was again a favored toastmaster with his ready wit and was informally accepted as a perpetual member of the Technicality Society—for which, as a lawyer, he said he could qualify.

Chairman R. S. Wertheimer at the banquet made a brief but straight from the shoulder statement which was most heartily applauded. In substance he spoke as follows:

"This spring meeting of the Pacific Section of TAPPI has apparently been enjoyed by everyone, and I am sure that we have all benefitted by being here. These gatherings provide an occasion for the people in the industry here on the Coast to get together, to meet one another, to talk over the common problems which we all have.

"A great many of our problems are solvable only thru the application of existing equipment. We therefore are more than glad to have the equipment and supply men with us at these meetings, to draw from their specialized experience and knowledge. We welcome the consultants, a group of men with a broad background of practical experience.

"Every one who comes to a meeting of this kind con-

L. R. Wood and D. E. Cousins of Union Bag and Paper Power Corp. renewing acquaintance with Sigurd Norman of Spaulding Pulp and Paper Co. while J. W. Hull of Seattle keeps an eye on the camera man.

THOSE WHO ATTENDED

Roger B. Mullen, Tacoma, Cascade Paper Co.; H. J. McBride, Tacoma, Cascade Paper Co.; Donald Myers, Tacoma, Cascade Paper Co.; Ralph Reid, St. Helens, Ore., St. Helens Pulp & Paper Co.; J. E. Carter, St. Helens, Ore., St. Helens Pulp & Paper Co.; W. S. Hodges, Appleton, Wis., Appleton Wire Works; W. B. Payne, Vancouver, B. C., B. C. Pulp & Paper Co.; C. C. Hockley, Portland, Consulting Engineer; Thomas C. Lundberg, Seattle, G. D. Jenssen Co.; R. L. Hasche, Tacoma, American Smelting & Refining Co.; Charles D. Cummins, Seattle, Worthington Pump Co.

Fred Shaneman, Tacoma, Tacoma Electrochemical Co.; B. L. Shera, Seattle; H. W. Guettler, Chicago, Fibre Making Processes, Inc.; A. C. Silliman, Tacoma; Myron W. Black, Millwood, Wn., Inland Empire Paper Co.; R. Jennings, Portland, Oliver United Filters Co.; Pittock Leadbetter, Portland, Columbia River Paper Co.; Dr. Leo Friedman, Eugene, University of Oregon; Ivan Hall, Eugene, University of Oregon; C. R. Dawson, Eugene, University of Oregon; Earl G. Thompson, Seattle, Great Western Electrochemical Co.; Ralph B. Hansen, Shelton, Rainier Pulp & Paper Co.; James Nelson, Tacoma, Cascade Paper Co. W. H. Donaldson, New York, Perkins-Goodwin Co.

Louise E. McGrath, Elizabeth, N. J., Booth Chemical Co.; C. C. Hockley, Portland, Consulting Engineer; Thomas C. Young, Portland, Johns-Manville Co.; A. G. MacIntyre, Decatur, Ill., Staley Sales Corp.; O. L. Hurtig, Decatur, Ill., Staley Sales Corp.; S. P. Butler, Tacoma, Staley Sales Corp.; Fred R. Sievers, Victoria, B. C., Sidney Roofing & Paper Co.; J. A. Lundie, Powell River, B. C., Powell River Co., Ltd.; R. H. Scanlon, Powell River, B. C., Powell River Co., Ltd.; A. H. Hooker, Jr., Hooker Electrochemical Co.; R. H. Mort, Portland, Metropolitan Printing Co.; Paul F. Bovard, San Francisco, California Filter Co.; Kenneth Shibley, Seattle, California Filter Co.; Mr. and Mrs. G. W. Brown, Millwood, Inland Empire Paper Co.; H. A. Vernet, San Francisco, Oliver United Filters Co.

S. Norman, Newberg, Ore., Spaulding Pulp & Paper Co.; A. G. Young, Seattle; A. D. Myers, Tacoma, Cascade Paper Co.; William Einzig, Tacoma, Weyerhaeuser Timber Co.; Robert F. Shepherd, Portland; J. D. Hull, Seattle, Engineer; D. E. Cousins, Tacoma, Union Bag & Paper Power Corp.; L. R. Wood, Tacoma, Union Bag & Paper Power Corp.; W. E. Straight, Portland; Mr. and Mrs. Ray Smythe, Portland, Willamette Iron & Steel Works; Thomas Lovett, Portland, Paper Mill Equipment Co.; Ralph Shaffer, Tacoma, Shaffer Box Co.

A. Berggren, Tacoma, Shaffer Box Co.; W. W. Griffith, Tacoma, Union Bag & Paper Power Corp.; T. H. Godfrey, Tacoma: O. F. Stafford, Eugene, Ore.; A. D. Wood, Glens Falls, N. Y., Glens Falls Machine Works and Champion Fibre Co., Camden, N. C.; Edward P. Wood, Tacoma, Union Bag & Paper Power Corp.; C. R. P. Cash, Tacoma, Cascade Paper Co.; Ralph C. Brown, Tacoma, Cascade Paper Co.; R. G. Tyler, Seattle, University of Washington; U. A. Keppinger, Portland, Griffith Rubber Mills; F. W. Small, Portland, Independent Foundry; Charles C. Durkee, Portland; Ray J. Barber, San Francisco, Joshua Hendey Iron Works.

Dr. H. K. Benson, Seattle, University of Washington; W. L. Bueschlein, Seattle, University of Washington; A. H. Hodgson, Portland, U. S. Forest Service; W. A. Perrin, Tacoma, Hooker Electrochemical Co.; J. Q. Flynn, Tacoma, Hooker Electrochemical Co.; C. B. Everitt, Anacortes, Wn., Puget Sound Pulp & Timber Co.; E. G. Drew, Portland, J. O. Ross Engineering Corp.; L. L. Zodtner, Tacoma, Tacoma Electrochemical Co.; Harry E. Morgan, Longview; A. L. Raught, Longview; C. W. Morden, Portland; J. H. Stafford, Tacoma, Hooker Electrochemical Co.

M. T. Teaze, New York, Hardy S. Ferguson & Co.; George A. Frogner, Portland; Carl E. Green, Portland, State Sanitary Engineer; Dr. Paul D. V. Manning, San Francisco; J. D. Tennant, Longview, Long-Bell Lumber Co.; M. A. Wertheimer, Kaukana, Wis., Thilmany Pulp & Paper Co.; R. S. Wertheimer, Longview, Longview Fibre Co.; L. C. Peabody, Longview, Longview Fibre Co.; Stuart M. French, Seattle, Folwell Engineering Co.; D. R. Hettelsater, Seattle, Folwell Engineering Co.; Charles W. Knox, C. C. Moore Co.

A. Zimmerman, Longview, Pacific Straw Paper & Board Co.; Carl Fahlstrom, Longview, Longview Fibre Co.; J. B. Woods, Longview, Long-Bell Lumber Co.; M. L. Edwards, Portland, Bingham Pump Co.; R. W. Bingham, Portland, Bingham Pump Co.; P. E. Sullivan, Portland, Bingham Pump Co.; P. Hetherton, Longview, The Longview Co.; Rolland Richter, Longview, Longview Fibre Co.; Robin D. Wolf, New York, Pulp Bleaching Corp.

A few of the delegates snapped on the steps of the Longview Public Library during the afternoon intermission.

tributes something to it. It cannot be otherwise. It is a case of give and receive, to the mutual benefit of giver and taker.

"If anyone has any trade secrets he doesn't spring them at a TAPPI meeting. I mean real trade secrets. But we don't have to talk trade secrets. There are plenty of common problems on which common discussion is invaluable.

"Now about visiting the mills. It has been said that there are two ways of taking a visitor thru the mill. You can take him in the front door and out the side door, or you can take him thru the plant and explain things. I have felt personally that we learn as much from every one of our mill visitors as they learn from us. For what we give we receive an equal amount in return.

"A great many pulp and paper plants on the Pacific Coast for some reason do NOT welcome visitors. This I feel to be most unfortunate. Neither have these mills seen fit to take part in our TAPPI meetings. I believe, however, that as time goes on we will find all units of the Coast industry employing a more open attitude."

Referring to him as a man he had known very well for more than 30 years, Chairman Robert Wertheimer introduced M. A. Wertheimer, Chairman of the Board of the Longview Fibre Co., president of the Thilmany Pulp & Paper Co. of Wisconsin, "and also my father."

The elder Wertheimer spoke with a simplicity and forcefulness which held the audience. They were listening to a man who spoke with more than 28 years of successful paper manufacturing experience behind him.

"I have been very much interested, impressed and amused today," Mr. Wertheimer said. "I liked especially well Mr. Brown's discussion about the old 'Super'. I am serious now when I say that I wonder frankly where we are going. Where is the thing going to end? The old time practical super is passing out, the newer type of technical man is coming, a needed man with the rapid developments in the technique of paper manufacturing.

"What kind of man will be running the mill of tomorrow? The old super has not the fundamental knowledge which enables him to keep up with the technical developments of today. The younger technical man has different ideas than to get into overalls and to acquire by hard knocks the practical experience which got the old practical super thru his difficulties. There will be a new breed of supers coming in. Perhaps they must come from the machine hands—but if they do they will be without the needed technical training—or on the other

hand, as Mr. Brown has said, the technical man doesn't want to be practical. Perhaps we shall come to an impasse.

"Yesterday there no laboratories, no engineers, no technical men. I recall in the early days when we were trying to mix colors. The old supers resented outside advice from men who had made special studies of the color problem. Gradually we saw small departments grow up to handle color mixing. These became small laboratories, having need for technical men. There came to be more technical men and later they formed an association to unite on common problems.

"TAPPI didn't amount to much in the first five years. Today it has a wide membership, and mostly young men. Mills of today are largely under the control of the engineer and the technical man.

"I was very much interested in today's papers, in the purely technical papers as well as in the more abstract ones such as Dr. Manning's. Perhaps, as Dr. Manning has suggested, we shall reach a time when pulp is only a by-product."

The senior Mr. Wertheimer spoke highly of the Institute of Paper Chemistry recently founded at Lawrence College, Appleton, Wisconsin, and guaranteed a life for the first five years by finances contributed by practically all of the Wisconsin mills. Mr. Wertheimer believes that the Lawrence idea can and will be expanded upon a national basis.

"It is a work in TAPPI's line," he said, "somewhat a culmination of your efforts. The Lawrence Institute tends to solve the question, "How will we accomplish this transition from the old time super to the new type technical man?"

Secretary Benson, speaking again at the banquet, said that the national body was expecting a great deal from the Pacific Section. Dr. Benson hoped that the Section could maintain the reputation for activity which it had already established in its short life.

"If we just keep going a few years," Dr. Benson said, "we hope that all the mills will be taking part in the Pacific Section in whole hearted fashion. We hope to include the supers and other key men on the operating staff, and look for the time when Western managements will more generally support the work of TAPPI for which they in the end reap the reward."

Dr. Benson also said there was an excellent chance that TAPPI would hold its national meeting on the Pacific Coast in 1932.

And whereto next time? The first fall meeting was held in Tacoma, the first spring meeting in Longview. And in one of the briefest business sessions of all time, at the close of the afternoon program, the delegates with one unanimous motion moved to hold the next fall meeting in Portland, exact date to be fixed later.

It was a most enjoyable meeting.

Chairman Wertheimer's specific welcome to the equipment and supply men and consultants was not only appreciated by this group but was felt to be particularly timely. One man was reminded in this of an incident where a vice-president in charge of operations stormed at a change in purchasing methods which in some cases kept the equipment men out of his office.

"I want to see these men when they are in the territory," he said. "These fellows are full of ideas and are usually experts in their particular line. It's my job to learn what they know, to learn what's new, and I want to see them."

Superintendent W. G. Brown of the Inland Empire Paper Co. in a comment following his much-enjoyed paper said that several years ago he was a member of the Superintendents' Association, but that he never got a chance to attend a meeting because he was so far away. He expressed the hope that a way would be found to include the superintendents in the meetings of the Pacific Section of TAPPI.

Scott Henderson, humorous toastmaster from Tacoma, gave a new interpretation of TAPPI when he said They All Practice Prohibition Intermittently.

One of the thoughts brought out at the banquet was that the great tragedy of life was not that some men are rich and some are poor, that some men are wise and others are simple, but that men do not know one another.

Paper and Box Men Represent Coast in the East

A delegation of about thirty-five industrial, financial and business leaders of Tacoma, Wash., including Frank E. Jeffries of the Tacoma Paper & Stationery Co., and Ralph Shaffer, president of the Shaffer Box Company, Tacoma, will carry Tacoma's message of industrial opportunity direct to the most exclusive financial circles of the East on a tour arranged by the Tacoma Chamber of Commerce, leaving April 20. It is estimated that the group will represent investments totaling 100, 000,000.

The party will be the guest of President Charles Donnelly of the Northern Pacific in St. Paul and will make other stops in the middle west, including Chicago and Cleveland. Washington, D. C., will be reached in time for the annual session of the Chamber of Commerce of the United States, and while in this city the delegation will call on President Hoover. In New York it is planned to tender a luncheon to a selected group of industrialists and financiers of that city. Thence to Philadelphia, Boston, Buffalo, Detroit, St. Louis, New Orleans, Houston, Los Angeles, San Francisco, and Portland.

Mr. Jeffries is a member of the steering committee which has been named to conclude all arrangements in behalf of Tacoma.

Longview Fibre to Make Containers

The Lonview Fibre Co., Longview, Wash., will begin almost immediately, the erection of a single story addition to its plant for the manufacture of solid fibre and corrugated shipping containers, according to announcement by R. S. Wertheimer, resident-manager.

About 50,000 square feet of additional floor space will be provided. The plant will commence operation about August 1, 1930, and will employ about 50 men and women per shift.

The boxes made in this new plant will be sold under the trade name, Longfibre Containers and will be made of Douglas Fir Kraft board. They will be made from 100% pure wood pulp and no old papers will be used. A stronger, more sanitary, tougher and lighter shipping case will be produced. The plant will be arranged to operate one, two or three shifts as business requires. No new financing is contemplated. At the present time the company employs from 350 to 400 people.

The Relationship

between the

TECHNICAL MAN

and the

MILL SUPERINTENDENT

By W. G. BROWN
Superintendent, Inland Empire Paper Co.

THIS subject is the touchiest one I know of. The minute you get men working together where judgment and knowledge become mixed up with personality you've started something. So long as we can deal with definite and admitted facts there is little trouble, but as you all know, the art of paper making has its own little mysteries which aren't always easily explained or understood even by the technical man.

On the one hand stands the superintendent who may be pretty dumb technically, but he carries on his back the responsibility of the good operation of the mill. On the other hand oftentimes there is no such responsibility except the self-importance and wisdom which some of these young chaps seem to feel when they first start out in life and come in to tell the Super how he ought to run the mill. He is expected to take their opinions without any proof that they are right when all his life he has been made to feel his way by actual trial from one step to the next.

So he does with them as he has done with other men. He tries them out, if permitted to do so, until he has confidence they know their stuff as he thinks he does his. But he doesn't like to be forced to take their opinions without trial or confidence as he holds the responsibility and if anything goes wrong he will be to blame. Therefore the worst thing for them to do is to always be taking things over his head to the management without at least talking first to him about them.

Another thing about this relationship is that the Super is usually past middle age while the technical chap is ordinarily a young fellow. The Super is used to deciding things and handling men in the old way. The Technical man is put into the organization quite often without anybody knowing just what his duties are or how much authority he has. He may feel he is on trial there and must do something wonderful right away. If he is put under the Super's control, his knowledge probably doesn't get a fair show because the Super doesn't always know how to use him, and if he is put over the Super why then the Super feels he's about thru.

The difference in training, temperament, personality and outlook on life often make it hard for these two men to work together as they should. The old Super is looking backward, maybe resting too much on his record but knowing what he knows and the men he controls while the technical man is looking forward, wants to make quick progress and expects that his education will get it for him.

The great trouble on both sides is the lack of sympathy for the other fellow's viewpoint. Quite likely it is not even considered. Maybe it couldn't be understood. The old time Super feels that he was making a good sheet of paper before the technical man was born so why bring in this new problem now. The younger Super knows that great changes in the process and methods have occurred in recent years to decrease the cost and improve the product or to make running conditions better and more definite. He knows that the technical man is responsible for a large part of this and that it is necessary for every mill which expects to stay in the running to adopt the best systems and the best talent it can get. And if he is thinking at all he knows we must have organization and proper skilled and technical control and the larger the mills grow the more necessary it is.

Now with all this in mind what a fine thing it would be if the schools could train these young men in the art of human relationships along with their other work. I remember one young technical man just out of school. He was a good one, too, but when I wanted to talk to him I couldn't flag him down by the usual machine room method of whistling because it seriously offended his dignity. Then some of them are trying to impress everybody with their knowledge and you can't talk to them without an interpreter or without addressing them as you would the President of the U.S.A. I like to be able to ask a question and get an answer without being made to feel that I am really all wet and don't know much about the Modern Methods.

The modern technical man may in time be also a mill superintendent but I don't think he will unless the schools can give him some training in the practical meeting and handling of men that the old Super got by hard knocks and years of slow uphill climbing. I doubt if most of them want to be superintendents—they are looking for something better. But anyhow it certainly would be a fine thing if all the Supers could have the technical training in addition to their practical knowledge, but with the increase in size of mills it is going to be harder and harder for one man to know even the half of it so what we must work for is better understanding and teamwork.

There may be some envy or jealousy on the part of the old Super when he sees the younger man getting on so easily, covering in 10 years or less what it took him 20 or 30 to gain. Often he wishes he could go back keeping his practical knowledge and having their opportunity for education. It may bother some of the rest of us too when we think of these young fellows putting in their eight hours a day and then out playing golf while

we are subject to the call of the telephone any time day or night.

A Super can't make out a regular schedule of work and be guided accordingly, leaving the proper duties to subordinates or the technical man for there are too many unforeseen things in this game. It is the unexpected which makes most of the work and grief. If he could always figure on the mill doing just what he plans it should his worries would be nil. Or if he could figure out when the telephone rings at the head of his bed about 2 a. m. and some one says a dryer journal has broken off or the sulphite regulator has stuck and the

W. G. BROWN

Superintendent

Inland Empire Paper Co.

Millwood, Washington

machines are haying, he could get the technical man to go over and fix things all up, steady the crews down and get the machines going smoothly again, why that would be a real service. But here is where some of the personality business starts. The technical man might say that was the Super's business, not his, and that he was there to provide technical advice and suggestions during office hours and not do any of the dirty work or to injure his High Geared Brains by being called out of bed at unearthly hours.

Now get me right. Of course what I say is naturally from the point of view of the superintendent, but I have stated the thing strong and plain in order to get at the ordinary points of difference to see what can be done about it because we should correct them if we can.

From the viewpoint of the technical man there are things just as disagreeable and probably more so as he quite often is the under dog, the new comer, the cat in a strange garret. One thing the Super should not do is to offend him by laughing at his ideas. In the first place his laugh may be all wrong, the laugh of ignorance at some new process or discovery or even at some old principle of mechanics or physics. New technical men of course make practical mistakes which may be funny but ridicule doesn't encourage further help from the technical man. It may be his turn to laugh next time. Strange ideas these days are turning over too many old methods for any of us to turn them down without a second look.

To sum up, if the Super can encourage the technical man, trade knowledge with him, respect his opinions in the same way he expects his practical knowledge to be respected, it will make good teamwork and result in the improvement of the mill which is what they are both aiming at. And to indicate this is not all applesauce, I want to say that before trying to write this paper I got the ideas of our present technical man who, by the way, had a lot of practical mill knowledge before he went to college and became a technical man.

Hawley Announces New Mill

Following an announcement on April 4 which quoted Willard P. Hawley Jr. as saying that he and his father, W. P. Hawley, Sr., founder and former president of the Hawley Pulp & Paper Co., Oregon City, Oregon, would build a big paper mill at Kalama, Washington, there was much speculation in the Coast industry as to the interpretation of the announcement.

The younger Hawley, who made this statement in San Francisco, stated that the proposed mill would have a daily capacity of 150 tons of bleached sulphite pulp and 150 tons of kraft paper. Construction was to begin during the present summer. Mr. Hawley was on his way north after spending several weeks visiting in Mexico.

Since the retirement of the Hawleys from the paper business some months ago they have maintained an office in the U. S. National Bank Building, Portland. Both men have been absent from that office on travel to distant points a great share of the time.

They admitted some time ago they would get back into the paper business and it subsequently became known they had taken an option on a site at Kalama, Washington, a point on the north bank of the Columbia River about midway between Portland and Longview, and generally reputed to be a very desirable site for a pulp and paper mill.

The option was secured from the Kalama port commission, which in turn is said to have held it under option from E. S. Collins, one of the largest timber and financial men of Portland.

Upon making inquiry to the Hawley offices in Portland PACIFIC PULP & PAPER INDUSTRY was informed that the senior Hawley was in Texas recuperating from an illness.

The Hawley project at Kalama has no connection with another pulp mill project in that same city which is understood to be shaping up very rapidly.

Rainier Institutes Get-Together Meetings

The first of a series of meetings and dinners which will be held for foremen of the Rainier Pulp & Paper Mill Co. at Shelton, Wash., was held at the Shelton Hotel on March 17 with 20 attending. The meeting was arranged by D. B. Davies, resident manager.

Meetings will be held every two weeks to discuss topics of interest to the foremen on the mill, the purpose being to bring about a closer cooperation between the foremen and officials of the company. New problems will be discussed and theories worked out. Occasional dinners will be held with the meetings.

Among those attending the first meeting were: D. B. Davies, F. Schmitz, B. Libby, P. Monson, M. C. Kaphingst, J. T. Kirkpatrick, P. Anderson, A. M. Cadigan, P. Ditman, E. Putnam, E. Dahlgren, J. Rabitoy, S. Viger, L. Walton, E. C. DeBolt, F. Van Iderstine, A. J. Ferguson and C. J. Caesar.

Ferdinand Smith was appointed to find out if the men of the plant were in favor of organizing a baseball team. A. C. Cadigan will assist him in making preparations for a team if the men wish to enter the Twilight league. Last year the mill entered the league late in the season, altho it did not have a team thruout the summer.

The Manufacture of Liquid Sulphur Dioxide and its Use in the Pulp and Paper Industry

By R. LEONARD HASCHE
Chemical Engineer, Research Department
American Smelting & Refining Company

MANUFACTURE of liquid sulphur dioxide in the United States is now confined to several small producers scattered over the country. There are three or four plants on the Atlantic Seaboard, one in the Middle West and another on the West Coast. The daily production at the individual plants is small, probably not exceeding eight tons per day on the average at the largest plant.

According to information available all of the producers operating in this country are burning sulphur for their source of sulphur dioxide. Various attempts have been made during the past few years to recover liquid sulphur dioxide from by-product or waste gases, i.e., from roasters, pyrite burners or converters. However, without exception the practice has been abandoned, the plants either having been closed down or they have changed over to sulphur burners. There are various reasons for the failure of the plants to operate successfully on by-product gases. The chief trouble can probably be laid at the door of the process used for the recovery of liquid sulphur dioxide from the gaseous mixture.

Water Absorption Process

The water absorption process has been universally used in this country and abroad. Various modifications are found in the several plants, but it is essentially the old German process of Hanisch and Schroder, first used in 1885. It consists of separating the SO_2 from the other components of the gaseous mixture by absorption in water, yielding a sulphurous acid liquor of varying concentration, depending upon the partial pressure of the SO_2 in the gas and upon the temperature of the absorbing water. The SO_2 is expelled from the liquor by heating the latter to near the boiling point of water or by a combination of heat and partial vacuum. The gas liberated from the liquor is substantially pure and after being dried with sulphuric acid or calcium chloride is compressed to about 80 pounds and the liquid condensed in coils surrounded by cooling water.

Inherent in the process are weaknesses which make it impracticable to operate economically on a gas low in sulphur dioxide or of the fluctuating character which often obtains when using by-product gases. By a gas low in sulphur dioxide we mean one which runs about 7% SO_2 by volume; such a gas strength is about the maximum obtainable from a roaster operating on zinc or copper concentrates or the average from a copper converter. The burning of iron pyrites gives a richer gas but adds a cost for raw material and we are, therefore, not classifying that as a source of by-product gases.

The effect of strength of a gas in SO_2 upon its solubility in water is well known to all familiar with operation of a bisulphite pulp mill. Whereas, with a gas of 15% to 17%, from sulphur burners, a liquor can be obtained running from 1.75% to 2.75% free acid, with a 7% gas a solubility of free SO_2 in water of only about 0.8% obtainable. Thus, it is quite apparent that enormous quantities of water and, consequently, steam—for process heating—will be required when the water absorption process is operated on a lean gas. Approximately 128 tons of water would have to be circulated and heated to boiling for the recovery of 1 ton of sulphur dioxide.

As a consequence of the poor economy of the water absorption process for the manufacture of liquid SO_2, when operating on either by-product gases or on a richer source — from sulphur burners, an expensive product is given to the trade. The lowest price quoted for the compressed gas in ton lots is $60 per ton, to the oil industry. It is now being used by them in the Edeleanu Process of refining western crudes. In 150-pound cylinders it is currently quoted at 7c to 8c per pound for the technical grade, while for the ultra-dry product, free from oil and non-condensible gases, the refrigeration trade pays as much as 18c per pound and retails it to the private consumer at about 60c per pound. Thus, the present high cost of liquid SO_2 prohibits its use in many fields where it possesses great advantages over the product from the burning of sulphur. To enter these very large fields requires the reduction in cost to the consumer to much nearer the equivalent sulphur price.

Bisulphite Process

The manufacturers of paper pulp by the bisulphite process come into consideration as the largest possible users of liquid sulphur dioxide in competition with the burning of sulphur. It would be presumption on the part of the writer to impress upon the minds of members of the pulp and paper industry the magnitude of the consumption by the bisulphite mills in the United States and Canada. The daily consumption is approximately 750 tons of sulphur, or equivalent to 1,500 tons of liquid sulphur dioxide.

The company which I represent has for some time past been considering the possibility of producing sulphur dioxide for the pulp mills in the Puget Sound district. In 1919 a 20-ton per day plant was built at Tacoma to operate on the water absorption process. The plant was in production for several months but

A paper read at the annual Spring Meeting of the Pacific Section of TAPPI, Longview, Washington, Saturday, April 5, 1930.

costs were too high to warrant continuance of operation. The gas supply from the copper converters was sufficient for a plant considerably larger in size, and as originally planned it was to be a forerunner of a larger plant of capacity to supply two bisulphite mills with their whole requirement or several mills with a portion of the sulphur in equivalent liquid SO_2.

In 1927 the problem of working out a process of more economy than the existing one, was turned over to our research department. The problem in all of its ramifications was a difficult one. Of first consideration was the gas supply. Converters are the only source of SO_2 gas at a copper smelter, of a sufficiently high concentration to consider. Yet the operation of the converters is very intermittent and the resultant gas very fluctuating in strength. Since the gas supply was not a steady one nor one of uniform strength any process developed must be sufficiently flexible to provide for these variable conditions.

Problem of Cost

The second problem was to devise a cheaper concentration and liquefaction process than the absorption one in common use. In the first investigations attempts were made to find a better absorbent for sulphur dioxide than water. Several organic solvents offered promise. Among the cheaper ones was tar oil, consisting essentially of toluene and xylene with about 5% of tar acids. Several patents were found in literature which specified the use of tar oil for the purpose.

Absorption experiments, however, revealed that while tar oil was an excellent solvent for pure SO_2, it had very little advantage over water when used with dilute air mixtures. The mistake of taking the solubility of a pure gas in a solvent as a criterion of what is to be expected from a mixture of the absorbable gas in inert gases is a very common one. We know that according to Henry's law the solubility of a gas in a liquid or solid absorbent is proportional to its partial pressure in the gas.

Yet, as is well known, the proportionality is not always a straight line function. If we plot per cent of SO_2 by volume in the gas mixture as the abscissa against per cent absorbed by weight as the ordinate, we obtain with water and most of the fixed oils either straight lines or slightly convex curves, while with tar oil and solvent naptha a very concave curve results. In fact the two latter solvents are poorer than water with a 7% to 50% gas.

Glacial acetic acid and various ketones proved to be excellent solvents for a 10% SO_2, but their physical characteristics as well as their high costs eliminated them from consideration.

Our attention was next drawn to recently developed solid adsorbents, more particularly to silica gel and activated charcoal. Weight for weight silica gel adsorbs from a 10% gas 11 times and charcoal 23 times as much SO_2 as does water.

Absorption vs. Adsorption

It may be of interest to explain the mechanism of this so-called adsorption as contrasted with absorption, which we have to deal with when a gas dissolves in a liquid solvent. In the case of absorption in liquids there is usually some chemical reaction associated with the physical absorption. A solid adsorbent such as silica gel or activated charcoal has a sub-microscopic structure capillary in nature. We know that the vapor pressure of a liquid at a given temperature is greatly reduced when contained in capillary tubes.

Now the capillary pores of silica gel, for instance, are of the order of a few millionths of a millimeter in diameter; hence it is possible to condense a gas to a liquid in the gel at a temperature greatly above its liquefaction temperature at atmospheric pressure. Thus we have an explanation of how a solid adsorbent can take up such a large weight of gas per unit volume, for we have an actual liquefaction within the pore space. This is further borne out by the fact that the heat of adsorption is large, of the order of magnitude of the heat vaporization.

The use of one or the other of these solid absorbents looked very attractive. The absorptive capacity being so much greater than water offered possibilities of great savings in heat required to expel the SO_2 from the solvent. However, we were not able to efficiently supply external or indirect heat to liberate the adsorbed SO_2. The inability to accomplish this was due to the poor heat transfer obtainable through he adsorbent beds. We therefore concluded that a solid adsorbent of this type was not suited to our purpose of concentrating a gas. Another objectionable feature possessed by activated charcoal was its catalytic activity in oxidizing SO_2 to SO_3.

It seemed very evident that a radically different principle would have to be followed before a successful low-cost process could be developed. The idea of separating sulphur dioxide from its gaseous mixture by the use of a solvent was abandoned and instead a method sought for its separation by selective liquefaction at low temperature. A very efficient pressure-refrigeration process was the result of our efforts. The fundamental principles underlying the new process were worked out in the laboratory and the heat balances and pressure-temperature relationships were calculated by the writer. Estimated operation costs looked promising for a large plant. The next step was to put the process to test on a pilot plant scale. The plant has now been in operation a sufficient time to demonstrate its success; about 80 tons of high grade product has been produced. I shall briefly explain some of the salient features of the process as worked out from our experimental operation.

Gas Purification System

As a necessary adjunct to our new process we required an efficient gas purification system. The gases from copper converters contain much metallic dust as well as arsenic trioxide and sulphur trioxide fume in a fine state of subdivision. The greater part of this suspended material is not subject to separation in dust settlers or by centrifugal means. The ordinary smelter practice of electrical precipitation followed by special filters cleaned the gas very satisfactorily. The gas after being cleaned passes to a gas storage of suitable capacity to iron out fluctuations in gas strength as well as to bridge over any short periods when no gas is obtainable from the converters.

From the storage the gas, which may vary in strength from 5% to 14%, passes to the liquefaction system. It is compressed to a pressure of approximately 20 atmospheres, the heat of compression removed, and given a special drying treatment which involves neither the use of a chemical dryer or removal of water by refrigeration. The compressed gas is then cooled to a temperature of approximately minus 100° F., which causes condensation of substantially all of the SO_2 to

(Turn to page 46)

Some Aspects of Record Keeping

By L. C. PEABODY
Office Manager, Longview Fibre Co.

THE science of record-keeping with particular reference to costs is not essentially a technical study; and yet the careful and efficient conduct of the office is so inevitably tied in with the continuity and smoothness of operation in the mill, that a short and frank consideration of desirable and undesirable features in pulp and paper mill record-keeping may be pertinent and even interesting to a technical group.

Admittedly the Technical Association makes its longest strides toward the truly scientific control of mill operation in its persistent attention to the mechanics, the chemistry, and the theory of pulp and paper production; but one of the essential tools to technical study is mill data in concise and accurate form.

And, just as the latest and most approved conveyor system moves the materials of manufacture with minimum handling to the desired place at lowest possible cost and, consequently, most efficiently, so the office, when properly geared in to the operation as a whole, can convey the essential facts of past and present performance in organized and effective form to those vitally interested—the executives, the engineers, the technical and research men—and thus takes its part, not wholly unimportant, in the technical control of the plant.

There is some feeling—happily not general—that the office and its apparent thirst for records is a necessary evil to be tolerated where unavoidable, but to be disregarded wherever possible. Similarly, perhaps you have occasionally sensed an attitude of some office men of over-exaggerating their particular part in the common objective of highest quality of goods and service at lowest possible cost. In this day, when integration and coordination is the essence of efficiency, either attitude is unfortunate.

Aids Technical Division

In a brief and perhaps sketchy way, may I suggest some ways in which the office may properly become a very essential aid to you of the technical division of the business through the more scientific accumulation and segregation of pulp and paper manufacturing costs. For, while cost accounting is not the only function of the office—as the purchasing, employment, sales, order, billing, and general accounting departments all present problems of their own—yet the cost accounting department is receiving increasing recognition as a vitally important division of essential office routine, important because under such highly competitive business conditions as exist today, accurate knowledge of costs means the difference between profit and loss.

And, incidentally, the cost accounting department also presents one of the most difficult problems, because cost keeping tends under any but the most skilled direction to become a burdensome and expensive accumulation of ineffective figures. May I, then, direct your attention to the three phases or stages of cost accounting evolution and, time permitting, suggest some practical means to more effective cost-keeping.

Until comparatively recently few firms kept cost records as such. With single-entry bookkeeping the bookkeeper carefully penned individual items of expense of all kinds to one side of a huge ledger, and items of income of all kinds to the other side of the ledger, with a periodic totaling and balancing of expense with income for a profit and loss determination. The growth of the industry and of individual plants necessitated variations and amplification of this elementary method, but in many offices it grew like Topsy, resulting in the same final obscurity of definite cost data and precluding all possibility of analysis.

Inadequate Cost Records

Payrolls were not analyzed, store room issues were not segregated in detail, inventories of materials, stock in process, and finished goods on hand, were not allocated to accounts where their effect on current costs could be known. In the smallest of manufacturing plants such a lack of systematic cost analysis might not be fatal; but because of the complexity of any pulp and paper operation of today, with selling prices as close to costs as they are today, the necessity of cost accounting is obvious. This first evolutionary stage, then, represents that period when no adequate cost records were kept.

Then, with the development of cost-consciousness came a swing of the pendulum to the opposite extreme in a so-called scientific endeavor to determine exact costs, which resulted in a veritable frenzy of record-keeping.

In the second stage in its evolution, cost accounting made the unfortunate mistake of emphasizing the quantitative aspect with little regard to the qualitative. The superintendents and foremen devoted many minutes of valuable time to recording page after page of data, much of which got carefully bound and buried in the office records,—detailed and arduously taken inventories compiled monthly, statements of expense items to the extent of pages of beautifully organized figures, too cumbersome to make proper analysis possible, too detailed to indicate danger zones to executives if for no other reason than their completeness of detail irrespective of significance.

Most mills at some time in their development have experienced such a period—when almost daily a new

A paper read at the annual Spring Meeting of the Pacific Section of TAPPI, Longview, Washington, Saturday, April 5, 1930.

form, fresh from the expert cost accountant's desk and the mimeograph or ditto machine, encroached still further upon the time of straw bosses, foremen, tour bosses, and superintendents, until it seemed to those involved that the company was endeavoring to pull itself up by its boot straps by using more paper for forms and reports than it could produce on its machines.

Too Much Detail

And not all of the resulting grief fell to the mill operators, for with exaggeration of cost-keeping office overhead jumps beyond reason. Cost clerks, Monroe operators, comptometer operators, typists, slave their full 48 hours a week at company expense in an almost vain endeavor to lessen the pressure of the flow of the cost department's raw material by trying to keep pace with it. True, I am exaggerating, but so was record-keeping in this second stage of its evolution.

Lastly, in cost accounting evolution, the organization of costs, bringing to executives and the mill leadership qualitative and discriminating records, accurate and efficient thru the elimination of the unnecessary. It could well be argued that the essence of scientific cost-keeping lies in the selection of the significant figures of cost, and a summarizing of these into well organized statements, the items of which tie in systematically with the detailed records filed in their original form for later reference if and when necessary.

Costs no longer serve the single purpose of regulating prices. They are vital to the sales organization and policy; but they are similarly vital to the production manager, the superintendents, the engineers and technical group as a barometer of inefficiency. And unless they serve this latter purpose there is inevitable unrecognized waste.

Simple and accurate data must be made available in minimum time; for, while Lindbergh could drive his plane blind for his 30-hour trans-Atlantic flight, he couldn't have done so week after week, nor can those executives who drive thousands of horse-power.

The cost accounting department must provide the visibility, the direction, the stabilization of the expense of production through its disclosures of weakness and waste; and by making its figures available promptly and in well organized, simple, form, it takes its important place in the technique of efficient operation.

You are interested in the raw materials used in any one department, in their labor, both operating and repairs, in the manufacturing supplies used, and in the properly apportioned burden or manufacturing expense —depreciation, taxes, insurance, steam, electrical power, yard expense, administrative expense. This information should be yours, in order that future policy and practice may be formulated and controlled in the light of past and present experience. A dynamic, purposeful, cost accounting will give you this at minimum expense.

Simplicity Means Efficiency

I am not discussing the advisability of a cost accounting department with a large staff of workers. Perhaps in the larger plants this is required; but the essential thing is in tying together the various sources of information, whether it be payroll distribution, store room issues, or departmental reports, so that accurate detail forms the base or background of well organized, summarized, cost statements, whether one person or many is required in formulating the results. Cost accounting has made rapid strides since the war, and this third stage in the evolution of record-keeping is standing the pragmatic test, thru its simplicity, its more efficient approach, and the usefulness of its organized statements of costs.

Now, if these three stages of record-keeping were chronological, and if our industry had uniformly arrived at scientific cost control, this discussion would be of interest only because of its historical significance. But such is not the case.

In 1930 some of us are still in that first stage, lacking the cooperation between office and mill which will permit the accumulation of cost figures; more of us are in the second stage, where the cost accounting department itself is less efficient than the mill, and where the accumulation of detail has obscured the true function of the department; and probably none of us have fully arrived. I, personally, have had called to my attention a pulp and paper operation in the Pacific Northwest—not the Longview Fibre Company—where the most difficult problem of the accountant in charge is in obtaining from the mill that essential information as to inventories, usages, and production data, without which no intelligent and useful cost statements can be prepared.

Cost Statements

Similarly, in the Pacific Northwest there is an organization which prepares monthly cost statements to the extent of 60 typewritten pages, including arduously taken physical inventories of every piece of material and equipment in the plant—a statement requiring a large accounting staff for its preparation, and which is not made available for three weeks because of its elaborate detail. And, while this may be essential in the case of the particular mill, it would seem that for the greatest usefulness and economy, simplification and elimination of the unnecessary would be an evolutionary change for the better.

There is no better stimulus for the scientific development of cost-keeping than a highly competitive market where selling price and costs differ by only the narrowest margin. It would seem, then, that the present day offers unusually large incentives for increasing attention to the problem of effective record-keeping.

And now, by way of practical application of the above theoretical discussion, may I point out a few ways in which we feel that progress has been made toward simpler and more accurate cost-accounting.

13-Period Year

First, the 13-period year offers distinct advantages over the more usual 12-month year, in that each period involves exactly four weeks and comparative statements cover the same time interval. Under the more common basis one is required to make constant mental reservations as to the number of working days involved. January may have 27 operating days, while February may have 24, with consequent distortion of costs caused by a necessarily incorrect allocation of overhead. Profits for one month cannot be compared with profits for the next without proper allowance for variation in the length of the periods involved.

With 13 four-week periods slightly more office work is involved, but this is more than offset by the simplification and improvements in cost analysis made possible. The adoption of this method has provided extremely satisfactory results, and we have at least demonstrated this—that any individual concern so wishing may make the change without complication in its relations with others on the old basis. Changes of this kind come slowly as far as the entire business structure of the country is concerned, but individual plants could well con-

THE POWELL RIVER CO.

is getting busy on that new machine room to house No. 7 machine which will boost the daily capacity by 120 tons. At right is seen two-machine room completed in 1927.

sider the change without waiting for a complete calendar revision.

Second, a logical improvement in method lies in the program of inventory-taking not at stated intervals, but when stocks are low. Physical inventories when stocks are at their maximum, and particularly when bulk materials are concerned, are often less accurate than properly kept book figures, simply because of the mechanical difficulty of accurate measurement. It is obvious that perpetual book inventories, in the form, preferably, of visible card files, are essential, whether store room materials, raw materials, or finished products are concerned.

Third, possibly as important a feature as any other in record-keeping, lies in the skillful preparation of forms. Departmental reports can either be simple or complex; and, the simpler, the more workable for the cost department, and even more so for the mill. Mill men are neither willing nor capable cost accountants, and the well organized and clear form for mill records is of first importance.

Adapting the System

A small but important change in our maintenance labor distribution has saved several hours a period in our time office; and even more important, it has relieved our maintenance foreman of what heretofore has been a rather irksome task. For economy and convenience, we are printing most of our mill forms on a mimeograph machine so that changes of form to fit changing condition can be made promptly and with little expense.

Fourth, our executives have found great value in an up-to-date report in the form of a large tracing to which is posted daily the high spots of the previous day's activity. About two dozen columns are devoted to the significant items of the pulp mill operation, to show chipper department operation, ground wood plant, digester and diffuser operation, recovery and causticizing. Similarly, the significant facts for the previous day's activity in the power department are posted to about two dozen columns showing steam and electrical production and distribution. Another group of columns indicates the pertinent figures on board machine, paper machine, and converting plant operation. At a total cost of a clerk's time for one-half hour daily, this form can be carefully maintained in the office of the manager, where it can be referred to at any time. The one form accumulates three months activities and can then be blue printed for distribution to interested persons. Its value is in its summary of the complete picture, and its emphasis on essential and accurate cost data.

In conclusion may I acknowledge the somewhat unusual privilege of discussing record-keeping before a technical group. Just as each department of a mill operation comes under the careful scrutiny of plant executives and engineers, so the costkeeping division of the office should be similarly scrutinized, particularly in view of the very real contribution it can make toward efficient operation if properly geared into the whole.

Powell River Expansion Progressing

Construction in connection with Powell River Company's expansion program at Lois River and Stillwater is proceeding according to schedule. The provincial government has approved the company's application for 24,000 H.P. at Lois River and all that remains to be done now is install the various power and manufacturing units.

About 4,000 yards have been excavated from the north and south portals of the tunnel which is to connect up the dam site on the Lois with the power plant at Stillwater. A night shift has been started on this work. Excavation and grading for the wood and concrete penstock between the north portal of the tunnel and the dam site is well under way.

Drilling at the dam site has been finished and the rock faces on either side of the river are being exposed in readiness for construction. Timbers for the log cribbing are being prepared, and the power house clearing is complete. The high tension wires on the main transmission line between Stillwater and Powell River have been strung, and all the camp buildings are occupied.

The bulk of the excavation of the machine room site at the main mill at Powell River has been completed and trenching for fittings and foundations is well under way. Concrete is now being poured. Excavation for the foundations of the grinder room and groundwood screen room site has been started.

The two 3000 KVA turbo-generators being installed in the steam plant will soon be in operation.

Some Pulp Activity at Toledo, Oregon

Possibility of the ultimate development of the pulp and paper industry at Toledo, Oregon, is seen in a movement on the part of the Toledo Port Commission and other interested persons to obtain from the government an appropriation for use in deepening the Yaquina Channel to provide for the landing of large ocean craft at that port.

To this end C. L. Starr, Portland attorney, accompanied by a representative of the port commission, recently appeared before the board of engineers at Washington, D. C., in support of the claim that Toledo territory is exceptionally rich in pulp material resources. While the board of engineers did not recommend the appropriation, the promoters were encouraged over the fact that the government body did not turn down the plea. No action on the request had been taken early in April.

The plea was made in face of an unfavorable report made by Colonel G. L. Lukesh, Portland division engineer, who questioned if the expense of dredging the channel was warranted from the standpoint of potential pulp mill development.

In connection with the movement to deepen the Yaquina Channel it was learned from an authoritative, but confidential source, that a group of pulp mill operators had pledged themselves to build a large pulp mill on a site near Toledo, provided the government favors the port improvement. It was pointed out that the stand of Sitka spruce and Western hemlock, together with natural reforestation, would insure the permanent operation of the pulp industry in that community.

Association Appointments

The American Paper and Pulp Association announces the following appointments to represent the paper industry in the work of the United States Chamber of Commerce:

National Councillor—L. M. Alexander, Nekoosa-Edwards Paper Co., Port Edwards, Wis.; Substitute National Councillor—M. E. Marcuse, Bedford Pulp & Paper Co., Richmond, Va.; Delegate—S. L. Willsou, American Writing Paper Co., Holyoke, Mass.; Substitute Delegate—Jesse H. Neal, American Paper & Pulp Association, New York, N. Y.

Both Mr. Alexander and Mr. Marcuse have long been interested in the affairs of the National Chamber. Mr. Willson and Mr. Neal have taken part in the recent business conferences sponsored by the Chamber to carry out President Hoover's campaign to revive business.

Conferring On Box Convention

Plans for a joint meeting of Portland and Seattle box makers at the Lewis and Clark Hotel, Chehalis, Wash., on April 5 were under way as this was written. The gathering was to be preceded by golf at a local country club, with a dinner-conference in the evening, according to Rufus C. Holman, vice-president of the Pacific Coast Box Makers Association.

Convention committees were to report on the progress being made for the annual gathering at Victoria, B. C., in June, and it was expected that Theodore Rothchild of the F. C. Stettler Manufacturing Co., Portland, would submit a draft of the business program for approval. About 20 box makers were expected to attend.

The meeting was originally scheduled for March 29, but was postponed because of inclement weather which would have eliminated the golf tournament.

Little New on Salem Board Plant

There is little new to report with respect to the projected binder board mill which the recently organized Western Paper Board Products Co. proposes to erect at Salem, Oregon, to utilize flax mill and pulp mill screenings.

J. G. Heltzel, Salem attorney; J. F. Gailbraith, manager of the Miles Linen Co., and Fred Thielsen, former manager of the Rodgers Paper Co., Salem, last month appeared before the Salem Rotary and outlined the company's proposition. The company is seeking to finance its project locally.

One of the sponsors of the project is F. Puttaert, of San Francisco, who owns a small paper machine which it is intended will be moved to Salem for use in the new mill.

Pulp Loading at Grays Harbor

Pulp loadings on Grays Harbor at the Grays Harbor Pulp & Paper Co. plant in Hoquiam during the last 10 days of March were brisk with three ships taking sizeable cargoes. Two intercoastal freighters lifted around 500 tons of pulp each for the New England states, and another ship took 800 tons of pulp and paper for California.

Salinas Wax Paper Plant to Start

The Salinas Valley Wax Paper Co. is preparing for another season's run at its plant at Spreckels, near Salinas. A carload of equipment and supplies has been shipped from the company's other plant in Arizona. The Salinas plant waxes paper for the vegetable shipping industries of that section.

Cascade Manager Resigns

George W. Forrester, resident manager for the past year or more of the Cascade Paper Co., West Tacoma, Washington, resigned early this month.

Paper Jobbers To Address Printers

At the April meeting of the San Francisco Club of Printing House Craftsmen, "Paper" will be the topic of discussion. The following members of the paper trade in San Francisco will speak: Frank Kilsby, Recorder Printing & Publishing Co.; Thos. A. O'Keefe, Pacific Coast Paper Co., "Cardboards and Bristols"; Arthur W. Towne, Blake, Moffitt & Towne, "Bonds and Writings"; Louis A. Colton, Zellerbach Paper Co., "Coated Papers"; and Charles Pritchard, Bonestell & Co., "Book Papers."

After the speakers of the evening have finished their talks, a round table discussion on paper problems will take place. The meeting will be held at the Hotel Bellevue.

United Box Shows Earnings

United Paper Box Co., organized March 1, 1929, to take over the Mission Paper Box Co., and Scott Bros., Inc., reports profits of $61,505 for the year ended February 28, 1930, equal to $4.38 per share on the A stock and $2.78 a share on the B stock after payment of dividends of $1.60 per share on the former.

Although no formal profit and loss statement was submitted to stockholders, Morris Spiegelman, chairman of the board, announced that the company's sales increased 15% over the preceding year, an increase exceeding in percentage any accomplishment of the former companies. The ratio of current assets to current liabilities was three to one at the end of the fiscal year.

This view of the plant of the Olympic Forest Products Co. at Port Angeles, Washington, shows how construction was progressing the latter part of March on this new 175-ton bleached sulphite pulp mill. The acid towers and digester house are easily identified in the left foreground. The screen room, bleachery and machine room are seen to the right. To the rear on the left is the sawmill.

B. C. Protests Trade Agreement Change

If the need arises, the British Columbia newsprint industry may send a delegation to Ottawa to protest against any modification of the Australian trade agreement under the terms of which Canadian newsprint is favored.

The agreement is now under discussion in the Canadian capital.

F. N. Youngman, vice president of Pacific Mills, Ltd., Canadian subsidiary of the Crown-Zellerbach Corporation, as spokesman for the newsprint business in British Columbia, is strongly in favor of sending a delegation to Ottawa.

"If it were not for the preference we receive in the Australian market it would be impossible for us to retain our present proportion of the total trade," said Mr. Youngman. "At present our sales to Australia are increasing steadily. To meddle with the agreement now would be to upset this growth."

British Columbia now ships about 40% of Canada's newsprint exports to Australia, most of this being taken care of by Powell River Co. and Pacific Mills, Ltd.

British Columbia's lumber delegation to Australia and New Zealand has returned from its four months' mission well satisfied with its reception. While the chief business of the delegation was to extend sales of lumber, they also interested themselves in the promotion of pulp and paper marketing.

Appleton Wire Executive Visits Coast

G. E. Buchanan, secretary-treasurer of the Appleton Wire Works, Appleton, Wisconsin, has been coming to the coast every three or four years for the past twenty. His last previous trip was in 1926. He is now on his way back to Wisconsin once more after spending about ten weeks on the Pacific Coast visiting the mills from Los Angeles to the Canadian border in company with Walter S. Hodges, Pacific Coast respresentative of the Appleton company. Mr. Buchanan says he always enjoys his visits to the Coast, particularly in the winter months when he can get away from the Midwest's deep snows. He expressed much surprise on this present trip at the general industrial activity of the Coast, and the pulp and paper activity in the Northwest in particular.

Port Angeles Mill Soon to Operate

While construction and machinery installation at the Olympic Forest Products pulp and lumber mill center at Port Angeles is reaching an advanced stage this month, work on the Elwha Water Diversion system also is approaching completion.

The Minton vacuum dryer for the new pulp mill is now on its way from the East coast and other equipment has already been partly installed. The digesters were given a steam test in the first week of April, receiving steam from the completed one of three 1,400 h.p. water tube boilers being installed. One of two turbines in the powerhouse is practically ready to turn over. Chris Kuppler's Sons, contractors, were winding up their construction job with concrete pours in the filter house on a hill overlooking the mill and in a pumphouse at the foot of the promontory.

All but a couple of hundred feet of the 8,000 feet of tunneling in the Elwha water system had been drilled by the first week of the month and concrete lining was being placed in the earlier-finished sections. Laying of concrete and wood-stave pipe from the tunnel end to the city of Port Angeles and the Forest Products mill was about one-quarter done.

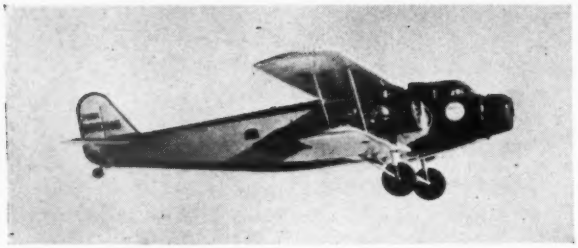
In general the builders are making rapid progress in the construction of the new 150-ton bleached sulphite mill and its various auxiliaries. The schedule originally called for beginning of production about May 15, and, while it is the exception rather than the rule for a new mill to get going as per schedule, the prospects seem fair that the first cooks will be made about 30 days after that date.

Zellerbach Buys Stockton Firm

Zellerbach Paper Co., San Francisco, has taken over the paper business of Dixon & Crane, Stockton, California, it was announced recently.

Gay E. Crane will be associated with the Zellerbach company in the sales department of the Stockton division.

T. Wallace Buist, McLaurin Jones & Co., Los Angeles representative of manufacturers of gummed paper, was in San Francisco recently on business.



A Boeing Transport Plane in Flight

Shall We Fly -?-

In this article

MAJOR ERIK NELSON
Round-the-World Army Pilot and now Sales Manager for the Boeing Airplane Company

tells some of the practical ways in which the Pacific Coast pulp and paper industry can shorten time and distance by taking to the air.

Near Mount Rainier

SIX years ago when planes of the Army's world flight succeeded in circling the globe, the commercial development of aviation in this country was negligible, to say the least. The one consequential evidence of development in commercial aviation was the transcontinental air mail route, inaugurated and operated by the United States government. This important project was, in effect, the pioneer of American civil aviation.

Today, aviation is a great industry. Its development during the past few years has been strikingly rapid. Established air routes, over which are transported passengers, air mail and express, form a network which literally blankets the nation. Miscellaneous flying activities, including private flying and flight instruction, are vastly extensive. Of our total air mileage of 200,000,000 miles in 1929, 125,000,000 miles were recorded in the latter class of aviation.

One of the most recent developments in aviation is the growing use of the airplane by progressive business organizations, who see in the comparatively new agency of transportation a means by which industry may be greatly speeded up, and a means by which the efficiency of the conduct of business affairs is thus effectively multiplied. Generally speaking, we may analyze the scope of the airplane in business by dividing it into three classes: the company-owned airplane operation, the use of passenger planes operated by established transport services, and the use of the air mail and air express services.

In each of these, the important factor is the time element. The great time-saving feature of the airplane is the keynote of commercial aviation as a whole, and no one appreciates better than today's executive the high value of time.

In discussing the application of the airplane to the pulp and paper industry, it becomes apparent that each of these three general uses of the airplane in business may possibly be applied with profit.

It must be appreciated that not every company can effectively and justifiably own and operate an airplane for the expedition of its particular business, for the reason that the cost of a plane and of its operation is comparatively high. However, an organization with widespread activities well may consider seriously the advantages of a company-owned plane.

While flying up the British Columbian and Alaskan coasts in 1924 the country impressed me as offering a broad field for airplane use. Canneries, lumber mills, mining companies and other industries were operating on that ragged, isolated coast line, depending entirely upon slow watercraft transportation for contact with the distant cities where land transportation facilities terminated. Now airplanes are serving many of those industries and well, and air traffic is a vital economic factor in both the Canadian province and the American territory.

For example, Boeing flying boats—an ideal aircraft for the Pacific Northwest where water landing facilities

PLANE BRINGS SPEEDY RELIEF

To prevent a costly delay in concrete pouring operations at the new Olympic Forest Products mill, modern aeronautics and modern construction agencies joined forces effectively Wednesday evening.

Toward the end of a big 800-yard mixer for the pulp mill's water filter plant, the Angeles Gravel and Supply Company's central mixing plant broke down at five o'clock Wednesday. A distress call was dispatched to Seattle immediately.

Fifty-two minutes later a new discharge chute for the crippled mixer was aboard a flying boat of the Gorst Air Transport at Pier 3 in Seattle. In another 62 minutes the powerful machine spanned the distance to Port Angeles and alighted in the bay here. Thirty minutes after its arrival the chute was installed on the concrete plant and the mixer was again producing a supply of material for Chris Kuppler's sons at the new mill.

Placing a special night shift on the job, the contractors saw the pour of the filter walls and slabs completed shortly after 4:30 o'clock this morning. The mixing outfit on Railroad Avenue dumped the last load into a bathtub truck at 4:35 o'clock. Thus was completed one of the large pours of the Forest Products construction project, the work having started Tuesday morning and continued without a hitch until the temporary breakdown yesterday.

The Gorst plane, a Boeing flying boat, that ended the delay was piloted by Clayton L. Scott. He was accompanied by Vern C. Gorst, head of the Air Transport organization.—From the Port Angeles Evening News, March 29, 1930.

are everywhere—are being used extensively by the lumber, mining and fishing companies of British Columbia. Specifically, how are these industries using aircraft? Here are some examples:

A large cannery, hundreds of miles up the coast from Vancouver, was crippled during the height of a salmon run by the breakage of an important part of its machinery. The details of the predicament were radioed to Vancouver, necessary replacements were placed aboard a flying boat and in a few hours the cannery was again in operation. As a result, one of the large canning companies of the province is purchasing two Boeing flying boats for use this year in their operations. These planes will transport executives to and from canneries, spot fish, maintain a liaison between fishing fleets and canneries, carry emergency shipments and serve the organization in many other ways to conserve time and speed up the business.

The Lumber Industry

Take an example from the lumber industry. Some 30 miles out of Vancouver, industrial metropolis of British Columbia, is Howe Sound, an important log booming ground. Yet, despite the proximity of Howe Sound the log buyer has hitherto had to make the trip in slow watercraft and spend a full day on a log inspection trip. Today's log buyer boards a flying boat at Vancouver, flies to Howe Sound in a few minutes, inspects the log rafts, and is back in his Vancouver office within two hours.

One need not search afar to find uses for aircraft in the growing pulp and paper industry of the Pacific Coast. The nature of the business serves to plant the operating mills at outlying points convenient to supplies of wood, water and power. The rugged nature of the north Pacific Coast, indented with hundreds of waterways, in many cases cuts off these outlying mills from the executive offices in the metropolitan centers. There are many cases where the only communication possible—other than air—is by slow watercraft. In some cases a single organization may be far-flung, with offices in several cities and with mills at widely scattered points. Executive contact between plant and office in such cases can be greatly facilitated by taking to the air.

Aircraft knows no handicap of mountain or water which might prove to be retarding, if not insurmountable, for rail, highway, or other transportation. On the contrary, the many bodies of water on the Pacific Coast are a distinct advantage to the use of flying boats.

Water travel is slow, time consuming. A trip from Seattle to the mill town of Port Townsend, Washington, for example, uses up a full day. To Port Angeles a night trip on the boat is usually necessary. To the forest operations to the west of Port Angeles on the Olympic peninsula is even a slower matter.

MAJOR ERIK NELSON

Round-the-World Army Pilot and now Sales Manager Boeing Airplane Co.

An airplane, capable of traveling 100 miles an hour, is quite unconcerned with the terrain that lies between starting point and destination. The jump from Seattle to Port Angeles is a matter of about an hour, down to the Western Coast beyond only a few minutes more. Airplanes, hurdling mountains and swiftly crossing dense forests, break down the barriers of time and distance.

In British Columbia

In British Columbia's pulp and paper industry transportation difficulties are even more pronounced. Ocean Falls is 36 hours north of Vancouver by water; it is but a few hours by air. Northern Vancouver Island is three days by regular boat service from the metropolis of the province, or 24 hours by a rather difficult combination of steamer, automobile and gas boat. By air, it is approximately three hours from Vancouver. Powell River, 80 miles north by water and an overnight boat

(Turn to page 59)

This Boeing flying boat found no difficulty in leaping over Coastal mountains to land a surveying party upon a British Columbia land-locked lake.

William Fromholz, acting as lead dog, followed by Dan Canavan and Fred Herring, three of Wendell Dawson's assistants, trek across Grace Lake in the early morning hours.

Winter Mapping in Southeast Alaska

When you are searching out Nature's potentialities you have to deal with her as is. Engineers making the field studies for potential hydro-electric developments in connection with the Zellerbach and Cameron-Chandler paper mill projects in Alaska have found that Nature provides her own set of conditions.

Wendell Dawson, field engineer in charge of water power investigations for both groups, working under the direction of R. A. Kinzie, San Francisco consulting engineer, carrying out some studies on Grace Lake, Revillagigedo Island—on which Ketchikan is situated. He contributes some interesting views of field conditions.

Those who know Southeast Alaska know it as a land of heavy timber and dense undergrowth, more than plentiful rainfall and a temperate, moist climate. They do not know it as a bleak and foreboding country with dashing dog teams and 60 degrees below weather as the movies would picture it. But they also know that small differences in elevation above sea level can effect considerable changes in climate. While it may rain at sea level and the thermometer remain above freezing, one, two or three thousand feet up there may be ice on the lakes and heavy snow.

The illustrations on these pages give an idea of the going encountered by Mr. Dawson and his assistants. One photo shows Mr. Dawson at work on a plane table on Grace Lake. The other picture is of the men in the survey party sledding supplies and equipment across the lake in the early hours of the morning as indicated by the long shadows and fog in the background. In the lead is Wm. Fromholz, next, Dan Canavan and Fred Herring.

"Both Grace and Swan Lakes on Revillagigedo Island were mapped during this month under conditions shown in the pictures," Mr. Dawson writes, "for the purpose of ascertaining the amount of water which can be stored in them for power.

"It might be of interest to add that mapping in the winter time in this country has many advantages over mapping in the summer. Base lines can be easily measured on the ice and long reaches of the shore lines of lakes can be seen from points on the ice. Travel by skiis and snowshoes is rapid and the thick undergrowth of brush is buried beneath the snow or denuded of its foliage by the cold weather. The hardships of the cold weather are more than offset by the absence of annoying insects."

Alaska Projects Seem Nearer

Official information is lacking on the exact status of developments in connection with the proposed paper developments in Alaska. There is some unconfirmed knowledge, however, that the permittees and the government have been pretty much in agreement. In fact there is rather fair evidence that actual development may be started during the coming summer.

The northern timber allotment, in the general vicinity of Juneau, is held by the Cameron-Chandler interests—George T. Cameron of the San Francisco Chronicle and Harry Chandler of the Los Angeles Times—and the indications are that a site will be selected close to Juneau, with the abandoned mining town of the Alaska Gold Mines Co. at Thane probably favored.

The southern area, in the Ketchikan district, is held in the name of I. and J. D. Zellerbach, both of whom are executives of the extensive Crown Zellerbach Corporation.

During the past three summer seasons two survey parties, one studying the power possibilities and the other concerning itself only with the timber, have been investigating the two Alaska areas on a joint basis for both groups of permittees. These reconnaissance investigations, it will be recalled, have been conducted under preliminary permits issued in April, 1927.

It is believed that the two groups will locate in the proximity of Juneau and Ketchikan, the two principal cities of the Southeast Alaska coast. To so do would enable them to use both of these cities as a reservoir for labor and not make it necessary to go into the townsite

Wendell Dawson finds winter a convenient time to map Grace Lake, near Ketchikan, Alaska, where the Zellerbach interests are studying the potential hydro-electric developments with a view toward utilizing them for pulp and paper manufacture.

Alaska Aerial Survey Exp., Navy Dept.

Lake Tyee on Bradfield Canal, near Wrangell, Tongass National Forest, Alaska, is a valuable power site. The elevation is 1,336 feet above tidewater in the foreground. Here is a forceful illustration of the use of aircraft in industry.

business and thus involve the domestic affairs of the employes in the business of paper manufacturing.

B. F. Heintzleman, forester in charge of timber sales for the Tongass National Forest in Alaska, has now returned to his Juneau headquarters following a trip to San Francisco and Washington, D. C. At the first named city he held conferences with both the Cameron-Chandler and the Zellerbach groups, following which he immediately departed for Washington, to be joined there by Don Meldrum who has been in charge of the preliminary timber surveys for both groups. Mr. Meldrum has also returned to his Seattle headquarters now.

While no one would discuss what transpired either at San Francisco or at Washington there is some evidence that the permittees secured quite a general okeh on their propositions for ultimate development and that there is a better than fair prospect that actual consruction on at least one of the projects will begin within the current year.

The government stipulates that a paper mill of at least 200 tons daily capacity must be constructed and in production by 1932.

The Cameron group has selected water power projects for development at Long Lake and Crater Lake on Speel River, and Dorothy Lake on Taku Inlet. These represent a total of about 50,000 h. p. The timber tracts lie on the west and southeast shores of Admiralty Island. These tracts will contain five billion feet, b. m. A tract on the north shore of Icy Strait will also be held available for a 10-year period.

The Zellerbach group is expected to seek final permits on Mirror Lake, Manzanita Lake, Ella Lake, Grace Lake and Swan Lake, to provide a total of about 45,000 HP. Of this amount about 25,000 HP would be developed for the initial unit. The timber tracts selected for this area are on the west side of Revillagigedo Island from Loring north to Point Whaley, another around Burroughs Bay and on the Unuk River, and a third area on the east side of Prince of Wales Island in the vicinity of Cholmondeley Sound and Kasaan Bay.

W. S. Weaver Resigns As Bates Manager

W. S. Weaver, who pioneered the valve bag business on the Pacific Coast and built the Bates Valve Bag Co. branch at Los Angeles from a shop in a garage to a business making 19,000,000 bags annually and using 7,000 tons of paper, resigned as manager of the Los Angeles plant effective April 1. At this writing he had not announced any plans for the future.

He is succeeded by D. A. Fleischmann who comes from the East.

Paper and Agriculture

In the growing of crops

Editor's Note—Paper is finding an ever-widening use in the growing and marketing of agricultural crops. The subject being a large one it has been found convenient to divide it into several parts. The first of these articles, presented herewith, deals with the uses of paper in the growing of crops. Others in the series will deal with the uses of paper in marketing fresh crops, marketing refrigerated crops, and marketing preserved crops.

TWO Pacific Coast giants—the Paper Industry and Agriculture—are being linked ever more closely, year by year. For with the demand for increased production felt in the agricultural industries, it has been found that an allied industry, paper can be used in all phases, from crop growing to marketing the produce in fresh, preserved and refrigerated form. This first article deals with paper uses in growing crops.

The use of paper for growing crops is of comparatively recent origin. Paper mulch, the principal use for paper in growing crops, was invented and patented by Charles F. Eckart, in 1914, in connection with sugar cane culture in the Hawaiian Islands. Following a period of experiment, the process was extended to pineapple culture, and in 1922 attained appreciable economic importance in that industry. In the Hawaiian Islands the method followed consists essentially in extending black asphalted paper over the soil surface of the proposed rows and setting the plants through the paper, the paper serving to enhance crop growth chiefly thru the suppression of weeds and thru the increase of soil temperature and moisture.

There are at present two general types of mulching papers used. These types are based on durability. Papers fabricated for use with a single crop are designated as type A, while those made for use with two or more crops or for home gardens are styled type B.

The type A papers comprise those suitable for annual crops in field culture. They are designed to last as long as, or somewhat longer than the period during which the crop plants are in the field. The type A mulch is manufactured on the Pacific Coast by the Paraffine Companies, Inc., under license of the Eckhardt patents. It is composed of part rag and part waste paper, and is manufactured by saturating and coating paper stock with asphalt.

Mulch paper being laid by machine over a layer of fertilizer. The paper helps keep the fertilizer intact.

Type B papers comprise the papers suitable for perennial crops in all field culture, for a succession of annual crops in field culture, and for all home garden purposes. They are considerably stronger and more durable than the type A papers. Type B is used in pineapple culture.

Tests Significant

These mulch papers have been tested on potatoes, strawberries and truck produce in general. From the first use that Eckhardt made of paper mulch in the pineapple and sugar plantations the idea of farming under paper has grown by leaps and bounds as it was realized that the use of paper meant earlier and bigger crops with less labor. It was found that black paper raised the temperature of the soil as the paper absorbed the sun's rays. The moisture remained in the soil until it was absorbed by the plant roots instead of being wasted quickly by evaporation.

Also, the paper preserved the original cultivation of the soil throughout the growing period. The earth was tilled once at the beginning of the season and no more, except for turning the earth over from time to time in the spaces between rows by machine where the plants had been set through the paper.

Surprising results have been obtained at the government's experimental farms, Arlington, Va., in trials with and without mulch paper. It was shown by the experiments that not only are most crops from 90% to 500% more abundant but that they are earlier.

The application of mulch paper to the crop area is simplicity itself. In Hawaii, where thousands of miles of paper are used each year, the paper is laid by specially designed machines drawn by mules or tractors.

Planting is accomplished either through the paper, or between strips of paper. Such crops as tomatoes, eggplant, peppers, pineapples, or field corn, which require comparatively wide intervals are planted in regularly spaced openings made through the paper.

The extent of this use of paper and its future is commented on by Mr. Eckhardt, the inventor, as follows:

"There is a large field for the use of paper mulch on the Pacific Coast because it is readily adaptable for a wide range of crops. Like all innovations, and especially agricultural innovations, the development of the paper mulch system of growing must be gradual before it is

adapted for conventional use. On the Atlantic seaboard 12,000 miles of mulch paper were sold last year.

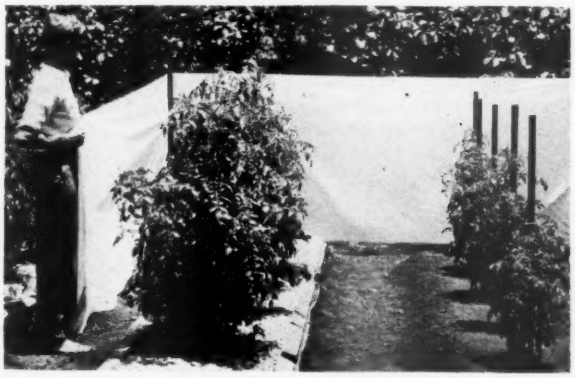
"In the continental United States and Hawaii, I should say that a very conservative estimate of the amount of paper mulch used last year would be about 7,500 tons."

Another important use of paper in growing crops on the Pacific Coast is in the manufacture of hot caps. In the famous Imperial Valley of California notably, the young melon plants are frequently protected with paper covers. Plants so protected mature their crops four to ten days earlier than unprotected crops. These protectors also make it possible to plant early during December and January, and so provide a better distribution of labor. Several kinds of paper caps are in use. Most common are the glassine or waxed paper covers, 16x18 inches in size.

Individual Covers

Immediately after planting the covers are put on. To support them, a piece of galvanized wire is bent arch shaped. The ends are thrust in the ground. The paper cap is then placed over this arch and the edges covered with soil to hold it in place. When the plants are about an inch high, the covers are removed, the plants cultivated and the caps replaced. Some growers, at this time, replace the caps with larger ones, 20x24 inches, partially for forcing, but mainly for wind protection.

In these same Imperial Valley melon fields another use of paper is found. In addition to the paper caps,



These nine-weeks-old tomato plants were grown with and without improved-perforated mulch paper in Hawaii.

brush and paper wind breaks are being used. These are conducive to a further increase of several days in earliness. In making these protectors four to eight sticks of brush, spaced four to six inches apart, are thrust into the ground with their tops inclined forward over the plants. Two double sheets of paper are then placed behind the brush sticks. Four to eight more sticks are then placed behind, and the soil is hoed over the base of the paper to keep it in place. The cultivation costs are somewhat increased but since the system prevents the wind from whipping off the crown set of blossoms and from damaging the leaves, the extra protection afforded is said to be worth the additional costs.

Still another paper device used in the melon fields consists of a machine pressed paraffine paper cone which is rigid enough to support itself, although it has to be anchored with soil banked on a flange around the base of the cone.

Many other paper products are used in the growing of Pacific Coast crops, among which may be mentioned

CHARLES F. ECKART

Invented and used mulch paper in 1914.

paper caps for blanching celery, individual vegetable parchment bags for each head of celery, and tray papers used in drying raisins.

Without doubt further fields to conquer await the manufacturer of paper products on the Pacific slope, in this enormously wealthy agricultural region. Ingenuity and foresight coupled with present day merchandising methods will reap for the paper manufacturer a golden harvest of his own in helping the harvest of field crops.

B. C. Pulp Profits Decline Slightly

Net profits of the British Columbia Pulp & Paper Co. for 1929, as shown in the statement issued to shareholders last month, amounted to $40,691, as compared with $42,172 the previous year. The profits for the year, before interest on bonded debt and reserves for depreciation and income taxes, amounted to $599,776. Dividends have been paid in full on the 7% cumulative redeemable preference shares of the company.

Diversion of part of the company's production from one market to another in the latter part of the year temporarily reduced sales and profits, according to Lawrence W. Killam, president. This also increased inventories and reduced the cash on hand, but the change is already working out to the benefit of the company, he says.

The profit and loss statement shows that profits on operations before fixed charges, depreciation and income taxes at $599,766 were less than last year when the corresponding figure was $723,334. Interest on bonded debt at $321,740 was approximately $5,000 less than in 1928.

The sum of $220,000 was allowed for depreciation in the 1929 statement whereas the greater amount of $340,000 was allowed for 1928. Thus, although operating profits were lower the statement shows net profits at only slightly below the 1928 figure of $42,172. This figure allowed in both cases for Dominion and provincial income taxes, the amount last year being $17,344 and in 1928 $14,347.

The company operates pulp mills at Woodfibre and Port Alice, B. C., and Mr. Killam says that market conditions indicate steady operation will be justified this year, particularly heavy sales having been made recently in the Orient.

Columbia Paper Building New Home

Columbia Paper Co., Vancouver, one of British Columbia's largest wholesale paper houses, will move into new quarters September 1, according to announcement made by C. J. Kay, managing director. The company is building a six-story building on Hamilton Street within a block of the company's present location. Excavation is now under way and when construction is completed the company hopes to have one of the finest buildings of its kind in Canada as headquarters. The job will cost approximately $150,000.

"General expansion in our business is responsible for this move," Mr. Kay explained to PACIFIC PULP & PAPER INDUSTRY. "We have been renting additional storage space for several years, and the new

C. J. KAY

Managing Director
Columbia Paper Co.,
Vancouver, B. C.

building will enable us to have ample accommodation under one roof, with an end to congestion, and plenty of elbow room for future developments.

"At present the paper industry is quiet in British Columbia as elsewhere, but we regard this as a temporary condition. The paper market is always an accurate barometer of general business conditions. When times pick up the paper industry will prosper along with the rest of the business community. We regard the present as the time to prepare for the expansion that is sure to come."

The building will provide Columbia Paper Co. with 63,000 feet of floor space. Not only will it provide greatly increased storage space, but will also provide room for more manufacturing, altho the latter is more of an incidental with this concern. The structure will be of reinforced concrete and fireproof.

Railway trackage facilities have been provided at the rear of the building, and the company is providing special parking space for customers' automobiles—an important concession because of the crowded traffic conditions in that locality. The first floor will be occupied by administration offices and sample rooms.

Columbia Paper Co. is also increasing the accommodation of its warehouse in Victoria by 25 per cent. Thomas Scott is the Victoria manager.

Pulpwood Cost Survey

The Pulpwood Department of the American Paper & Pulp Association—formerly the Woodlands Section—is initiating a new service for the industry which makes available comparison of detailed costs of pulpwood operations.

The report is designed to permit comparisons of groups of costs and specific cost items within groups.

Liquid Sulphur Dioxide

(Continued from page 34)

the liquid condition. The refrigeration is produced by expansion of compressed gas with the production of external work. The power recoverable from the expansion is of a considerable quantity; it is converted into electric power by a generator of variable capacity.

The process has numerous advantages over the water absorption process. Corrosion troubles are practically eliminated. Where it might occur is limited to traps and separators which are made of corrosion resistant materials. Special precautions are taken to prevent condensation of water in the compressor and pipe lines. As you know from experience in pulp mills, SO_2 is not corrosive as long as water is kept in the vapor phase.

The product obtained is of very high grade; it is very low in moisture and remarkably free from oil. The process is flexible, well adapted to a gas of varying strength. An additional advantage is that the liquefaction system may be closed down and started up again with no appreciable lag. Considerably lower production costs than with the water absorption process are possible.

Power is one of the important items of cost, which makes Tacoma a logical place for a large plant because of its cheap electrical power.

The use of large quantities of liquid sulphur dioxide by the bisulphite mills must naturally be predicated upon a price in line with its value as a substitute for the product from the existing sulphur burners.

There are many obvious advantages of introducing SO_2 in pure form, undiluted with air, into the acid and recovery systems. A stronger acid may be made and almost unlimited flexibility is possible in regulation of free acid combined in the cooking acid.

The solubility of SO_2 in water is shown in the accompanying plot containing data collected in literature and from our own experimental work. The following table shows the free acid to be expected with a 17% and a 34% gas for various temperatures of acid at the bottom of the tower:

Temperature		Free Acid in		% Increase
Deg. C.	Deg. F.	17% Gas	34% Gas	with 34% Gas
15	59	2.75	4.75	73
20	68	2.25	3.50	56
25	77	1.75	3.00	41.5

This increase in free acid by fortifying the gas in sulphur dioxide can be accomplished without raising the combined appreciably. This factor has an advantage during summer operation when high water temperature causes considerable difficulty due to greater solubility of the lime rock and hence high combined. There is no doubt but what the trouble can be entirely eliminated by the use of liquid sulphur dioxide.

A higher free SO_2 in the raw acid has possible advantages in subsequent parts of the system. More relief liquor from the digester is returnable to the recovery since greater dilution can be provided for with a corresponding reduction in sulphur consumption per ton of pulp.

We have considered above some of the more obvious advantages to be expected by introducing liquid sulphur dioxide into the acid towers. However, upon analyzing the situation more carefully it would appear that we would be degrading the product somewhat to dilute it with air in that manner. The maximum effect of the 100% SO_2 would be obtainable in the recovery system

when the strength of the raw acid could be boosted in free SO_2 to any desired extent and allow greater return of relief digester liquor. From the solubility curves referred to above we have the following vales for free acid obtainable from a 100% gas at various acid temperatures:

Temp. Deg. C.	Temp. Deg. F.	Free acid in % from a 100% Gas
15	59	12.5
20	68	10.3
25	77	8.9

We do not mean to stress the advantage of a high free acid in the cooking acid, because authorities are not agreed as to its beneficial effect in sulphite digesters. The experimental data on the influence of higher acid are very meager. This is doubtless due to the fact that an appreciably higher free acid is not obtainable when burning sulphur as the source of SO_2, and experiments in that direction would have little practical value. However, the majority of writers seem to be of the opinion that there are advantages to be expected in that direction. Edwards[1] states that experiments relative to the advantage of using a stronger acid indicate that an acid containing double the SO_2 concentration usually employed decreases the time by 25% and increases the normal yield 10%. Indications point to greater penetration, shorter time of cook and reduction in cost of bleach.

Sutermeister[2] states that the "present tendency is toward the use of acid of high strength, particularly in free SO_2". It has also been said that pulp made with stronger liquor has a greater bleachability.

Another advantage to accrue from introduction of liquid SO_2 into the acid plant is the increased capacity of the latter without capital outlay.

Purity of Gas

Thus far we have said nothing about the purity of gas from liquid SO_2 as compared with that from sulphur burners. The deleterious effects of free sulphur, SO_3 and selenium are well known; these impurities are absent in liquid sulphur dioxide. Edwards "considered these and other advantages to be great enough so that it would pay to purchase it at $15 per ton as against $24 per ton for sulphur, both f.o.b. mill."

It has been suggested from time to time that the refrigeration obtainable from the vaporization of the liquid SO_2 to the gas might be put to good use—this from the fact that some mills are employing ammonia refrigeration for cooling the water to the acid tower. However, the evaporation of one ton of liquid SO_2 at ordinary temperatures absorbs heat equivalent to the melting of 0.81 ton of water ice. This quantity of refrigeration, while it at first appears not inconsiderable, yet when we calculate the heat capacity of the water to the acid towers, is relatively not large. I have calculated that for a 150-ton pulp mill it would require the vaporization of 14 tons per day of liquid SO_2 to lower the temperature of the water one degree Fahrenheit. The recovery of this refrigeration by cooling the water is therefore not to be thought of. On the other hand, some slight advantage may be obtained from cooling the gas at the point of introduction and improve the absorption somewhat.

If it is not economical to vaporize the liquid by heat exchange with the tower water the question arises: How is it to be introduced into the system in gaseous form? When used to only partially replace sulphur dioxide from the burners, it can be introduced by a suitable arrangement into the cooler header following the combustion chamber. The burner gases would then supply the necessary heat for vaporization. On the other hand, if it were desired to eliminate the sulphur burners and to use liquid SO_2 exclusively or to introduce the latter into the recovery system, steam-jacketed vaporizers would be satisfactory, entailing a steam cost of not more than 15c per ton of liquid SO_2 vaporized.

It is the history of scientific development that when a commodity becomes available at a reasonable price new fields are opened up for its utilization in industries previously closed to it. Pure liquid sulphur dioxide is a wonderful solvent for certain types of organic compounds. This is the secret of its replacement of sulphuric acid in the refining of oils of asphaltic base. Very interesting experiments of McKee, Cable and others show that pure liquid SO_2 is superior to benzene in the extraction of resins from certain woods. It is quite possible that this commodity in liquid form will lend itself to the treatment of highly resinous woods, for special purposes, where several cooks with ordinary bisulphite liquor would be required for complete digestion.

[1] Edwards, Paper 26,350-4 (1920).
[2] Sutermeister, Chemistry of Pulp & Paper Making, p. 220, John Wiley & Sons, 1929.

Priest River Mill Outlined

Plans for financing the proposed $3,340,000 Pacific States Pulp & Paper Co. plant at Priest River, Idaho, were announced recently by A. T. Peterson of Spokane, executive vice president, in connection with the public offering to be made of $530,000 of the preferred and common stocks of the company. The plans call for the erection at Priest River of a 100-ton daily capacity Kraft pulp mill to cost $1,300,000. A 20-acre site on the Great Northern Railway and the Pend Oreille River has been acquired, Mr. Peterson announced.

Other investments contemplated by the company, according to its official announcement, is the purchase of the Beardmore saw mill properties at Priest River at a valuation of $400,000, half of which will be paid in cash and half in stock. The company will also acquire lime deposits on Pend Oreille lake valued at $264,467, a lime quarry to cost $50,000, and a water front mill site at Aberdeen, Wash., to cost $29,000. The company proposed to build a pulp mill on this Aberdeen site about two years ago, but has abandoned the idea, at least temporarily.

In addition to its physical assets the company lists a contract to buy wood waste from the Panhandle Lumber Co. at $210,000, a contract for wood waste with the Dalkena Lumber Co. valued at $105,360, and a sales contract placed with a wood pulp sales organization, New York, valued at $172,790, covering the sale of the entire output of the plant for 10 years. The working capital needed is placed at $308,400, making the total assets of the company, when the proposed financing is completed, $3,340,018.

Completes Job With Fir-Tex

Major A. S. Fairbanks, who was formerly associated with George C. Sardam in the Yaquina Fibre Co., with offices in the Porter Building, Portland, has completed his commission as draftsman for the Fir-Tex Insulating Board Co., at St. Helens. Reports that Major Fairbanks had been retained as consultant engineer for a projected Oregon pulp mill could not be confirmed.

T-R-A-D-E - T-A-L-K

Devoted to the Paper Trade of the Western States

Crown Appoints Nichols On Sales

H. O. Nichols, formerly sales representative in the Middle West with headquarters in Denver, has been

H. O. NICHOLS

appointed assistant manager of sales, Crown Willamette Paper Co., San Francisco.

Mr. Nichols, a practical paper man for a number of years, will specialize in wrapping paper sales.

U. S. Paper Company Gets New L. A. Building

A new building is being erected for the United States Paper Co. at 1301 East Sixth St., Los Angeles. The new structure is to be a modern warehouse type, 75x135 feet, two stories. The paper company is expected to move from its 1323 Palmetto St. location early in April.

According to S. Abrams, general manager, the firm started in business in 1927, employing two salesmen and occupying an area of 4000 square feet. In less than three years it has become necessary to employ fourteen salesmen, and in the new building an area of approximately 20,000 square feet will be occupied.

Coarse Paper Men Hold Monthly Meeting

The monthly meeting of the Denver coarse paper jobbers was held at the Oxford Hotel on March 25. Matters pertaining to a better understanding in the coarse paper field were dismissed.

General Appoints Winslow Sales Manager

W. S. Winslow, formerly with J. E. Linde & Co., New York City, and sales manager for A. M. Collins Co., Philadelphia, has been appointed sales manager for the General Paper Co., San Francisco. Mr. Winslow succeeds W. B. Reynolds, who has been promoted to assistant manager.

Don S. Leslie, assistant sales manager of the Hammermill Paper Co., New York City, is on the Pacific Coast visiting the paper trade. He recently inspected the new mill of the Grays Harbor Pulp & Paper Co. at Hoquiam, Washington.

Eastern Paper Makers to Attend Convention

Reservations from Eastern mill men are coming in at a good rate for the Pacific States Trade Convention to be held at Del Monte, Calif., the latter part of May, according to Charles Kahn, secretary of the association. Among those who have sent in their reservations are: Sydney L. Willson and R. S. Madden, American Writing Paper Co., Holyoke, Mass.; Wm. C. Wing, Fox River Paper Co., Appleton, Wis.; Albert C. Gilbert, Gilbert Paper Co., Menasha, Wis.; and C. W. Chabot, Hammermill Paper Co., New York City.

The chairmanship of the golf committee will again be in the able hands of Augustus Johnson, Everett Pulp & Paper Co. The other members of the committee are as follows: M. M. Baruh, Englander Drayage Co.; Andrew Christ, Jr., Western Wax Paper Co.; H. A. Goedje, Crown Willamette Paper Co.; and J. R. Millar, California Cotton Mills, Oakland, Calif. All the others are of San Francisco.

Isidore Zellerbach, chairman of the board of the Crown Zellerbach Corporation, and president of the Zellerbach Paper Co., San Francisco, will act as toastmaster, and also present the winners the prizes at the golf dinner Saturday night, May 17.

Twelfth
Annual Convention

PACIFIC STATES PAPER TRADE ASSOCIATION

DEL MONTE - May 15, 16, 17

Frank Wilder Represents Fitchburg

Frank Wilder, who makes his headquarters in Portland, has been appointed Pacific Coast representative to handle the products of the Fitchburg Duck Mills of Fitchburg, Mass.

Butler Adds Two New Lines

The Denver offices of the Butler Paper Co. announce the addition of two new lines—Toreador cover and Stonetax blotting. A general revision of the last price list was sent out to the trade during March.

Arthur W. Towne, director of advertising, Blake, Moffitt, & Towne, San Francisco, has been appointed chairman of the committee in charge of Advertising Achievement Week, May 25-31, in San Francisco.

Five truck drivers of the San Francisco division of Blake, Moffitt & Towne are proud to pose in their new uniforms. Their trucks, too, are uniformly painted.

Snappy Uniform for B. M. & T. Drivers

Smartly turned out in their new uniforms, whip cord caps, gray flannel shirts, gray ties, and whip cord trousers, the truck drivers of the San Francisco division, Blake, Moffitt & Towne present a fine appearance.

"We put the truck drivers of the San Francisco division in uniform," said Arthur W. Towne, director of advertising, "to foster an esprit de corps, and also to help the trade recognize that the truck driver is a bona fide representative of this company. It also adds to the men's self respect."

In cold weather the drivers wear a leather wind breaker coat. On the visor of their caps is the familiar bear's head trade mark of Blake, Moffitt & Towne.

The trucks of the firm are also painted uniformly: a warm cream color with red trimming. On the side of each truck is a metal and enamel sign with the company's name and trade mark.

Will Handle Maxwell Watermarked Bond

Blake, Moffitt & Towne has been appointed by the Maxwell Paper Co. of Franklin, Ohio, to distribute the new Maxwell Bond, a watermarked paper, thru its chain of jobbing houses on the Pacific Coast. The new paper is a high grade sulphite bond in the more reasonably priced watermarked field. A complete line of white and colors will be stocked by the Coast jobbers.

Knowlton Visits Southern Territory

Phil H. Knowlton, sales manager for the Carter, Rice & Carpenter Paper Co. of Denver, made a tour of the southern cities of the trade territory of his company during March getting as far south as the Mexican border.

Coast Weather Lures Golf Enthusiast

E. S. Colvin of the Appleton Coated Paper Co., Appleton, Wis., is visiting the Coast ostensibly to increase the sales of his company's paper products. In reality, however, Mr. Colvin confessed that his trip to the Coast at this time of the year was planned to give him a few extra weeks of golf ahead of his gang back in Appleton, where the links are usually covered with snow from October until May.

Victor E. Hecht, manager of the Zellerbach Paper Co., Los Angeles division, spoke on "Simplified and Standardized Practices and the Way They Lead to Profits," at the Printing Trades Division Meeting, March 19, in the Rainbow Isle at the Mayfair Hotel.

Going and Coming

T. A. Leddy, operating manager of the Zellerbach Paper Co., Los Angeles, made a short business trip to San Francisco recently.

Peter Duignan, formerly secretary to J. D. Zellerbach, president of Fibreboard Products, Inc., San Francisco, has been transferred to the National Paper Products Co., Port Townsend, Washington, succeeding I. Wallitner.

In an endeavor to centralize operations for greater efficiency, the Zellerbach Paper Co., San Francisco, has closed the Second Street division of the company in that city, which was formerly located in the Jackson building. There was no reduction in personnel.

E. A. Breyman, operating manager of the Zellerbach Paper Co., San Francisco, is making preparations for moving the company offices into the new offices at 343 Sansome street, which are rapidly nearing completion. The remodeled building adds much to the dignity of the financial district, and the modern treatment accorded it has resulted in a very imposing structure.

Ye'll Nae Ken the Home Town, Mon

James A. Watson, sales manager of the Pelican Paper Co., San Francisco, is at last going to take that long awaited trip to his old home town—Aberdeen, Scotland. Mr. Watson is to sail June 1 to be gone three months. He has not been home for 20 years.

P. A. Burt, sales manager in charge of cover papers, at Hammermill Paper Co., Erie, Pa., has been on the Pacific Coast for the last 30 days in the interest of his organization.

Ed Herrlinger, president of the Gummed Products Co., Troy, Ohio, and Mrs. Herrlinger, made a brief visit to the Pacific Coast last month.

IF I WERE A PAPER SALESMAN

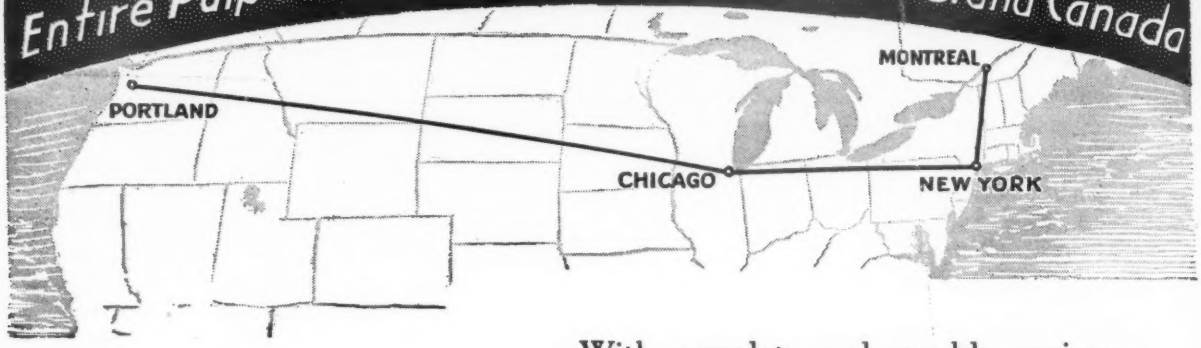
When interviewing a customer or prospect I would make it a point to ask him a few well directed questions about his business. By getting him to talk he not only becomes more interested but also he is mighty apt to tell you of some use he has for paper that never occurred to you.

In every business there is always an opportunity to create a new need for paper. One of the best ways of doing this is to let your customer talk.

Thomas A. Edison once said that most of his discoveries were based upon knowledge that he had gained by asking questions.

Ross Service

Always at the Command of the Entire Pulp and Paper Industry in the U.S. and Canada



- Ross-Briner Economizer.
- Ross - Grewin High Pressure Machine Ventilating System.
- Ross - Baxter Grinder Exhaust System.
- Ross Vapor Absorption System.
- Ross - Wagner Recovery Furnace.
- Ross Systems for Machine Rooms, Beater and Storage Rooms.
- Ross Drying and Conditioning Systems.
- Calender Cooling.
- Locker Room Ventilation.
- Loft Drying.
- Trim Conveying.
- Felt Drying.
- Motor Cooling.
- Unit Heaters.
- Filters — Fans.
- Machine Hoods.
- Plate and Sheet Metal Work.

With complete and capable engineering service, available through its four offices; quick dependable manufacturing and delivery service from two plants, the Ross organization is the logical source of supply for many kinds of pulp and paper mill equipment.

This service has been planned to meet all requirements, large and small; to function promptly and completely for the mill room requiring a single unit heater as well as for the machine room requiring a complete heating and ventilating system.

Such a service naturally provides extra economies for you resulting from prompt shipment and installation plus full assurance of the utmost in the quality and operating efficiency of the apparatus you order.

J. O. ROSS ENGINEERING CORPORATION

208 W. Washington Street, CHICAGO
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When writing to J. O. ROSS ENGR. CORP. *please mention* PACIFIC PULP & PAPER INDUSTRY

Westminster Effects Distribution Tie-Up

Smith, Davidson & Wright, one of the biggest and oldest wholesale stationery and printers' supply houses in Western Canada, has purchased a large block of the common stock of the Westminster Paper Co., which is now rebuilding its plant at New Westminster, B. C. The deal, involving close to $200,000, was put through by the Vancouver financial firms of Royal Financial Corporation and Victor W. Odlum, Brown & Company.

The deal means that the Westminster Paper Co. will have the advantage of the widespread selling facilities of the Smith, Davidson & Wright organization, which has branches in Calgary, Edmonton, Saskatoon and Victoria. Head offices are in Vancouver and representatives cover all centers in British Columbia, Saskatchewan and Alberta.

Smith, Davidson & Wright will also benefit from this new tie-up from the investment standpoint, as directors believe that the securities will return a handsome dividend, while the Westminster Paper Co. will also be a valuable source of supply.

The deal has resulted in a slight financial reorganization of the Smith, Davidson & Wright company under which E. B. McDermid, managing director of Royal Financial Corporation, and Brig. General Victor W. Odlum become members of the board of directors.

Meanwhile construction of the new buildings is being rushed ahead at New Westminster. The main building, measuring 60 by 250 feet, is more than half finished. Cement has been poured in the forms for the walls, and the roof is now being put on. Some of the heavy paper making machinery is being installed this month.

The company manufactures tissue paper, fruit wraps and other specialties.

It is estimated that Westminster Paper Co. will have $48,791 left for working capital after meeting all costs in connection with its reconstruction program. Funds for the new plant have been secured from insurance and from a bond issue for $300,000 which has been underwritten.

The company will begin operations with no capital liabilities other than the bond issue, according to a statement issued by the Royal Financial Corporation in connection with an offering of 24,588 shares of common stock at par value of $10 to the public. The authorized capital is 50,000 shares, of which 4650 have been subscribed and paid up. The offering of the 24,588 shares is for the purpose of retaining control of the company in Western Canada.

Net profits for the year ending July 31, 1927, were $31,649. The following year profits amounted to $29,-356, and for the six months ending January 31, 1929, the profits were $38,679. While the books were destroyed in the fire which razed the plant last July, it is estimated that the profits for the full year were about $85,000. Modern equipment is expected to increase the earnings considerably when the new mills get into production.

The company owns the majority of the common stock of the Pacific Coast Paper Mills at Bellingham, operated under the same management. J. J. Herb is president of both concerns.

New TAPPI Member

U. A. Keppinger of the Griffith Rubber Mills of Portland, Oregon, is one of the newest members of TAPPI, Pacific Section.

New Vancouver Plant Contracts Awarded

Pacific Mills, Ltd., British Columbia subsidiary of Crown-Zellerbach Corporation, has awarded the general contract for construction of its converting plant at Vancouver, B. C., to E. H. Shockley, whose tender of approximately $50,000 was the lowest received. Ten bids were submitted.

Announcement to this effect was made by Major W. G. Swan, Vancouver consulting engineer, who prepared the plans for the plant and received the tenders on behalf of Pacific Mills. The decision was confirmed by Frank N. Youngman, vice-president and general manager of Pacific Mills, who added that the main plant would be completed by June 15.

The completed plant will involve an expenditure of about $150,000. Orders are now being distributed among machinery manufacturers for the latest types of equipment. The chief purpose of the plant will be the conversion of pulp and paper produced at the Ocean Falls plant of Pacific Mills into sanitary towels, serviettes, fruit wrappers and similar articles for which the company reports a rapidly growing demand.

The plant will be located on land recently acquired at the foot of Raymur Avenue west of the B. C. Sugar Refinery. The property commands direct access to tidewater so that vessels arriving from Ocean Falls may be unloaded and their cargoes shifted to the converting plant at minimum cost.

Several important sub-contracts covering the heating and electrical installations as well as an automatic sprinkler system for fire protection will be let shortly. These contracts will involve about $70,000. As soon as the building is completed Pacific Mills head offices will be transferred from the Standard Bank building to the new location. All divisions of the company in Vancouver are expected to be in the new quarters by July 1.

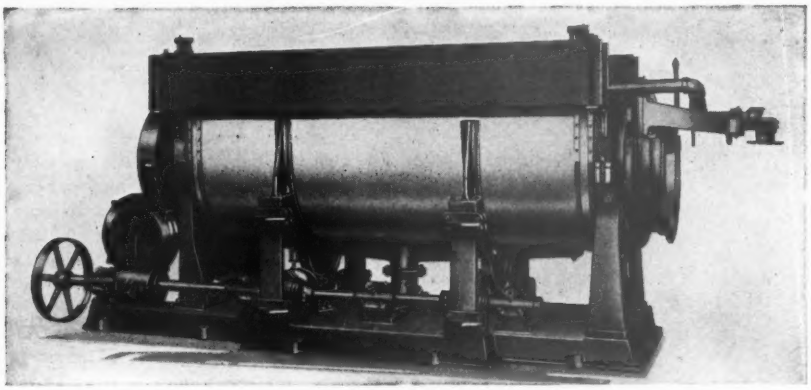
The main building, which is already under construction as part of the Shockley program, will be of heavy mill frame construction with concrete walls and floors, and abundantly lighted by wide steel sash windows. Dimensions of the building, which will have a foundation of piling, will be 250 by 135 feet. There will be a total floor space of 30,000 square feet.

Pioneer Paper Company Building Addition

The Pioneer Paper Co. of Los Angeles is building an emulsion plant on its property at 5500 So. Alameda Street. Hamm, Grant & Bruner, Inc., 607 Ferguson Bldg., Los Angeles, have been retained to prepare engineering and architectural plans and to erect the building.

The building will be part two and part three stories, and will be 50 by 160 feet in plan. The foundations and walls to the first floor will be reinforced concrete, with the first floor and adjoining loading and barreling platform at car height.

A railroad spur from the Southern Pacific will be extended along the building for the full length. The frame will be of structural steel, with corrugated iron sides and roof. All floors will be of reinforced concrete, with special supports for tanks and machinery. A hydro-electric elevator will be installed, and all parts of building and platform canopies will be protected by a sprinkler system. The plant, not including machinery and equipment, will cost $35,000 and is scheduled for completion in April.



THE REAL REASON FOR THE BIRD SCREEN'S POPULARITY

Every paper maker is influenced by the fact that the majority of mills use Bird Screens. But the real reason he chooses Bird Screens for his own use is this: Bird Screens have proved themselves best for his particular set-up.

Let us show you what Bird Screens will do in your mill.

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S·A·F·E·T·Y

FIRST — LAST — ALWAYS

The best safety device known is a careful man

Pacific Coast Division
Pulp and Paper Section
NATIONAL SAFETY COUNCIL

ROBERT H. SCANLON
Regional Director
Powell River Co., Ltd.
Powell River, B. C.

Let's Get Together

An invitation to cooperate in the work of

SAFETY FIRST, LAST AND ALWAYS

By R. H. SCANLON

Regional Director, Pacific Coast Division, Pulp and Paper Section, National Safety Council

TWO months ago a very enthusiastic group of delegates convened at Powell River, and at a session distinguished by energy and sincerity formed the first working committee of a Pacific Coast Section of the National Safety Council. It was, if I may so describe it, a chummy gathering; where an earnest effort was made to organize a coherent, working safety organization to embrace primarily the pulp and paper mills of the Pacific Coast.

Invitations extended by the writer to the different mills were accorded a gratifying response, which in itself was an indication that Pacific Coast mills are seriously interested in the promotion of safety in their organizations. The response, the co-operation and interest evinced by the delegates was a healthy assurance that the proposal to organize a definite committee, whose aims and objects were those of the National Safety Council—to stimulate and foster the study and application of safety methods in the industry on the coast—met with general approval.

The meeting was primarily for organization purposes, and nothing definite in the way of a campaign could be laid down at this time.

It is now time to press our message home. The delegates have had time to discuss future arrangements with their respective mill committees. Our first message at the Powell River convention has, through the medium of our special magazine, the PACIFIC PULP & PAPER INDUSTRY, and the conversations of the visiting delegates, been transmitted to every mill on the coast. The zero hour for our concentrated attack on accidents is at hand.

To me, our safety campaign is a straight contest, **accidents vs. non-accidents.** We, of the non-accident team are out for a clear cut victory. We find our opponents have plenty of heavy hitters on their line up; our non-accident team, poorly organized, partly trained, has been playing spotty ball, and our opponents have taken advantage of our every slip and lack of coaching. The result is still in doubt.

ROBERT H. SCANLON

Regional Director
Pacific Coast Division
Pulp and Paper Section
National Safety Council.

I believe, and am convinced that all the delegates who attended the Powell River convention believe, that our informal get together between innings will do

(Turn to page 55)

STATEMENT OF ACCIDENT EXPERIENCE—FEBRUARY, 1930
Mills in State of Washington

COMPANY—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Grays Harbor Pulp & Paper Co.	104,042	0	0	0	0	1
Cascade Paper Co.	39,312	0	0	0	0	2
Inland Empire Paper Co.	60,060	1	16.67	49	.816	3
Crown Willamette Paper Co.	371,436	10	26.9	407	1.096	4
Washington Pulp & Paper Corp.	99,156	3	30.3	35	.353	5
Everett Pulp & Paper Co.	73,488	3	40.8	23	.313	6
National Paper Products Co.	88,841	4	45.0	33	.371	7
Union Bag & Paper Power Co.	61,123	3	49.1	63	1.031	8
Longview Fibre Co.	72,672	4	55.0	139	1.913	9
Columbia River Paper Co.	54,212	3	55.3	45	.830	10
Puget Sound Pulp & Timber Co. (San Juan Division)	25,116	2	79.6	38	1.513	11
Shaffer Box Co.	11,520	1	86.8	53	4.607	12
Rainier Pulp & Paper Co.	54,952	6	109.1	44	.801	13
Fibreboard Products, Inc., Port Angeles	44,216	5	113.1	26	.588	14
Puget Sound Pulp & Timber Co. (Fidalgo Division)	27,240	4	146.8	70	2.570	15
Fibreboard Products, Inc., Sumner	18,278	3	164.1	52	2.845	16
Pacific Straw Paper & Board Co.	16,568	4	241.4	37	2.233	17

The following mills not reporting: Pacific Coast Paper Mills, Tumwater Paper Mills—not in operation.

A TIMKEN BEARING at EVERY VITAL POINT in PAPER MILL MACHINERY

Fortunate is the paper manufacturer whose plant is equipped with machinery that has Timken Bearings at every vital point, for he is assured of uninterrupted production, increased output, lower operating costs, reduced maintenance and longer machine life.

Fortunate is the production engineer who selects Timken Bearing Equipped machinery, for he will save time and money for his company, and worry and trouble for himself.

Fortunate is the production manager who has such equipment at his disposal, for he can work to faster production schedules, reduce production costs and meet delivery promises.

Fortunate is the workman who operates such machinery, for his work is easier and safer, and he does not have "time out" for lubrication, maintenance or bearing replacements.

Fortunate is the machinery salesman who can say "A Timken Bearing At Every Vital Point," for this is an important matter that users consider when buying machinery.

Fortunate are the stockholders in companies using machinery with Timken Bearings at every vital point, for such equipment has an important influence on dividends.

It is not a matter of anti-friction qualities alone. It is a matter of the extra endurance, precision and rigidity made possible *only* by the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel. These qualities are obtainable only in Timken Tapered Roller Bearings. *Are you paying for Timken Bearings without getting them?*

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

When writing THE TIMKEN ROLLER BEARING CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

Let's Get Together

(Continued from page 53)

much to bring our Pacific Coast non-accident team together. We have everything to make a winning team,—enthusiasm, youth and the will to succeed.

Team work and coaching have handicapped us to date, and it is these qualities that our inaugural meeting was intended to foster.

My personal message to all the mills on the Pacific Coast whether members or non-members of the National Safety Council, is to honestly study safety conditions in your mill. Perfect the mechanical equipment wherever possible. More important still, leave no stone unturned in the coaching and training of your human equipment. They are our heavy hitters. Without them our team is unbalanced.

Statistics show that the record of Eastern mills in safety is far superior to the showing of the West. There is no apparent reason, as far as I can see, for the situation, except that the East is more efficiently organized as a safety unit. In the West, safety is largely the concern of an individual mill. We have made no earnest effort to get together—to make common ground of our experiences and difficulties in the safety field. Organized safety has not yet been attempted in the West on a scale approaching that of the East.

I am convinced a Western division of the National Safety Council, embracing every pulp and paper mill on the Pacific Coast will go a long way towards solving the accident problem in our mills. I strongly urge every mill not yet a member of the National Safety Council to join with us.

The accident ratio in our mills can be greatly reduced, if not entirely eliminated. But we must work together. Organized effort with every mill interested and contributing their experience to the common fund, will bring results. This is the aim of the Western Division of the National Safety Council—**Results by Co-operation.**

The fees are exceptionally small compared to the many benefits. Communicate now with our nearest committee representative for full particulars, or with the Regional Director.

The Membership committee for the Pulp and Paper Section, Pacific Coast Region, are:

O. A. Jorgenson, B. C. Pulp & Paper Co., Bank of Nova Scotia Building, Vancouver, B. C.

Paul Rozell, Inland Empire Paper Co., Millwood, Wash.

Phelps Dodge, Oregon Pulp & Paper Co., Oregonian Building, Portland, Oregon.

R. H. Scanlon, Regional Director, Powell River, B. C.

Fire at Antioch

Fire, attributed to spontaneous combustion, early last month swept a stack of 13,000 tons of waste paper at the Antioch plant of the Fibreboard Products, Inc., entailing a loss between $15,000 and $20,000. The entire stack was said to be valued at $55,000.

The blaze was discovered by a watchman. No structures were endangered.

The board mill has been the scene of intermittent fires during the past five years, all of which have been attributed to spontaneous combustion. Investigations have been under way, it is said, to determine whether they are of incendiary origin.

FRED SHANEMAN

A. R. WHITE

Fred Shaneman Joins Tacoma Electrochemical

Fred Shaneman has become associated with the Tacoma Electrochemical Co., effective March 15, to handle sales of liquid chlorine and other products. Mr. Shaneman is a graduate of Dartmouth college. He resigned a few months ago from the Great Western Electrochemical Co., in which connection he had handled liquid chlorine sales.

Mr. Shaneman will work with A. R. White, general manager of the Tacoma Electrochemical Co. and will make his headquarters at the company's offices in the Puget Sound Bank Bldg., Tacoma. The Tacoma Electrochemical Co., a subsidiary of the Pennsylvania Salt Mfg. Co., completed a new and modern electrochemical plant at Tacoma about a year ago for the specific purpose of serving the growing pulp and paper industry of the Pacific Coast.

Bellingham Mill Holds Annual Meeting

At the annual meeting of stockholders of the Pacific Coast Pulp Mills, paper manufacturers, Bellingham, Washington, on March 17, three quarters of the total amount of stock was represented. The stockholders were presented with a financial report of the company, and a thoro discussion of affairs and prospects of the company followed. The stockholders were much gratified with the showing made for 1929, and at the conclusion of the meeting a motion of thanks and appreciation was extended to President J. J. Herb for his work in bringing the plant to a dividend paying basis and for the capable manner in which he handled the affairs of the company.

The following directors were elected: J. J. Herb, G. H. Bacon, P. J. Herb, H. M. Lord, and E. M. Herb.

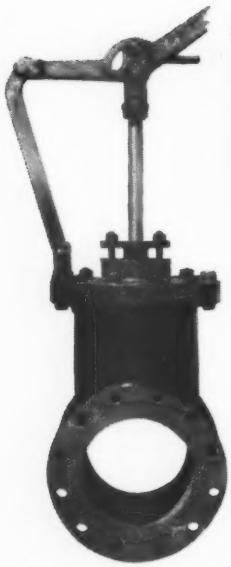
At the directors meeting immediately following the stockholders meeting, the following officers were elected for the company: J. J. Herb, president; E. M. Herb, vice-president and general manager; P. J. Herb, treasurer and sales manager, and V. A. Hughes, secretary.

At the directors meeting a sum of money was voted to take care of the installation of interfolded toilet tissue equipment, the same to be spent after a careful study of marketing conditions, if the management saw fit to install this equipment.

E. S. Colvin, representing the Appleton Coated Paper Co., Appleton, Wis., paid a brief visit to the trade on the Pacific Coast.

a SERVICE —that is profitable to You

as it embraces QUICK DELIVERY, PERSONAL CONTACT and LOWER FREIGHT COSTS. Take advantage of it by having your Pulp and Paper Mill Machinery built on the Pacific Coast by SMITH and VALLEY. . . . .



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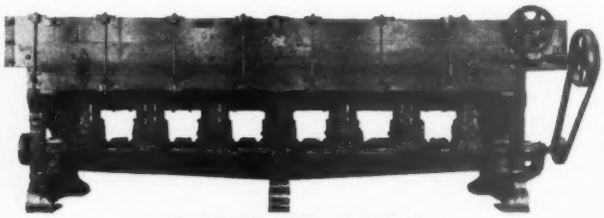
STOCK VALVE

Single Acting
Plunger Type
Non-Clogging
Will not Stick



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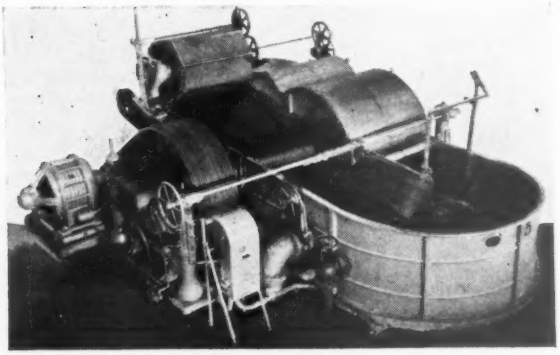
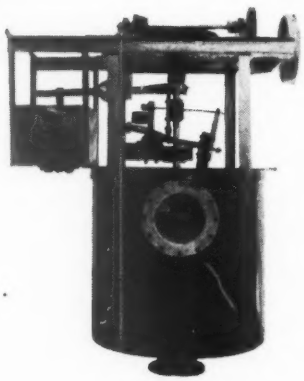
Noiseless—Efficient—Built for continuous and economic operation



Smith and Valley Hi Speed Beater—Built for any capacity required. Wood, Iron, Concrete or Metal lined tubs



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EQUALIZER

Designed to control and Regulate all Stock Consistency

SMITH and VALLEY SERVICE is Immediately Available on the Following Equipment—

Voith High Pressure Stock Inlet
Plug Valves
Niagara Beaters
Valley Laboratory Equipment
Wet Machines
Deckers
Barkers—Sizes 4, 5, 6 and 7 foot
Chippers and Rechippers
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Pulp Grinders
Jordan Engines
Paper Mill Rolls—all descriptions
Cylinder Machines
Cylinder Moulds—all kinds
Complete Wood Room Equipment
Special Pulp and Paper Equipment

Smith and Valley Iron Works Co.

Builders of Pulp and Paper Mill Machinery

PORTLAND, OREGON

Eastern Manufacturing and Sales Division:
VALLEY IRON WORKS CO., APPLETON, WIS.

Sales Agents: PACIFIC COAST SUPPLY CO.
San Francisco—Portland—Seattle

When writing to SMITH & VALLEY IRON WORKS *please mention* PACIFIC PULP & PAPER INDUSTRY

Set-up
Folding
Corrugated
Solid Fibre

BOARDS and BOXES

A department for interests allied with the pulp and paper industry

Board Mills and Paper Converters

Gruenberg Heads Consolidated Box

R. J. Gruenberg, former president of the Boxboard Products Co., one of the constituent companies forming the Consolidated Paper Box Co., San Francisco, has been elected president of the latter company. It was announced that Mr. Gruenberg had acquired a controlling interest in the company and would devote his entire time and attention to the affairs of the company.

The new president stated as his opinion that the business of the company was fundamentally sound and anticipated that the coming year should show a marked improvement in results over the past year. During 1929, it was said, which was the first full year of operation, the company had to meet the usual readjustments attendant upon the merger of separate entities and the realignment of its organization, and the reduction in sales brought about by the business depression which commenced in the fall of last year.

Mr. Gruenberg stated that with the economies which he had already put into effect and with further reduction in operating costs immediately planned, and with the apparent improvement in business conditions, there was every reason to believe that a successful future for the company could fairly be expected. He stated that he had invested his money in the company only after careful investigation of the industry.

The board of directors was reduced to seven from fifteen, and the following elected to the board to serve during 1930: Louis E. Raisin, William J. Warren, Edgar L. Stern, C. J. Bastedo, R. J. Gruenberg, Louis A. Thiebaut, and D. Sahlein. Of these Mr. Gruenberg was named president, William J. Warren, vice-president; E. L. Stern, vice-president; Louis A. Thiebaut, secretary, and Louis Raisin, treasurer.

Income account for the year, reported at the meeting, shows gross sales of $1,153,881; sales costs, $840,724; operating expense, $282,242, and other expenses, $38,513. To gross sales was added other income amounting to $9,789. Net profits amounted to only $1190 after interest charges but before depreciation and other charges. As 1929 was the first year of operation there are no figures with which to compare these results.

Stettler Says No Merger

F. C. Stettler, head of F. C. Stettler Manufacturing Co., Portland, has returned to his desk, following a visit of several weeks to California points. He was accompanied by Mrs. Stettler.

Street rumors that the Stettler plant was consolidated last month with a San Francisco paper products company were emphatically denied by company officials.

The Inland Paper Box Co. of Denver reports 1930 volume of sales ahead of 1929 for the first quarter with every indication of remaining that way.

Hugh Peat, secretary of the Pacific Coast Paper Box Association, San Francisco, is back on the job after being in the hospital for two weeks.

ANNUAL MEETING
Pacific Coast Paper Box Manufacturers Association
VICTORIA, B. C.
June 23, 24 and 25

Bartram Adds New Bag Machine

Bartram Paper Products Co., Vancouver, B. C., has installed a paper bag making machine which not only produces the bag but prints in two colors in one operation. It is said to be the only machine of its kind in Western Canada. Altogether, eight bag making machines are operated by Bartram, all those except the one referred to above being identical except that they print in only one color.

Under the direction of C. M. Bartram, the company has developed an important export business, selling its products in Australia, the South Sea Islands, New Zealand, British West Indies and South America. The prairie trade is catered to, and sales have been increasing in Alberta and Saskatchewan.

The company fabricates all varieties from small notions bags to the big kraft bags used for packing lime, fertilizer, grain and feed. Among the smaller products are the fancier styles for packing candy, jelly powder, and so on. A reserve stock of 8,000,000 bags of various types is usually maintained.

Bastedo Joins Longview Fibre Sales

C. J. Bastedo has resigned as sales director of the Consolidated Paper Box Co., San Francisco, to join the Longview Fibre Co., in the San Francisco office. Mr. Bastedo will work out of the San Francisco office and will have charge of the solid fibre container sales, and will also assist H. L. Wollenberg, president, in general sales direction.

Mr. Bastedo brings to his new position a wealth of experience in the paper box business. He was formerly a partner of R. J. Gruenberg in Box Board Products Co. before that firm merged with Consolidated Paper Box Co. He has been in the paper business for his entire career and in the paper box business for the past seven years.

At the Consolidated Paper Box Co. Mr. Bastedo will be succeeded by W. M. Warren.

The Longview Fibre Co. is building a large new plant at Longview, Washington, for the manufacture of fibre containers.

Foresight
Much Better Than
Hindsight

If it is a packet of pins, or a pair of shoe laces, go buy them.

But when it comes to anything as important as a paper machine or even a jordan, a pump, or a beating engine, you have a sky of another hue.

When Buying Beating Engines

Then it is that the shrewd buyer starts looking around. He wants to know something about the personnel behind the product. He'll have a hundred questions on design and construction—and price. He has long since learned that the time to get to the bottom of things is before he buys, not after the shipment is on his siding.

Take Yourself For Instance

When you are in the market for beaters, consider Mid-West High Speeds before you place your order. You'll find that "There is a world of difference in beaters" and that Mid-West has something mighty interesting both in design and price.

High Speed Beaters—and Other Mid-West Products in which You May Be Interested . . . . . .

High Speed Beaters, Continuous Automatic Systems for Roofing Felt, Stock Extractors, Cylinder Washers, Lever Type Dump Valves, Falk Gear Reducers, Bandless Type Rolls, Fly Bars, Bed Plates, Stuff Chests and Agitators, Dayton Cog Belt Drives.

THE MID-WEST MACHINE CO.
DAYTON, OHIO

Pacific Coast Representative
MR. JAY PLATT HAMERSLAG, 655 Russ Bldg.,
San Francisco, California

MID-WEST
PAPER MILL MACHINERY

The MIDWEST MACHINE CO.
DAYTON OHIO

Shall We Fly?

(Continued from page 41)

trip, is without rail or highway ingress. A plane could make the Vancouver-Powell River trip in less than an hour.

Further, Alaska is a likely field for pulp and paper development within the next few years. The airplane brings the United States and Alaska to less than a dozen hours apart and here airplane service would be exceptionally valuable in conserving executive time.

In the case of Alaska the airplane demonstrated its value in an excellent way last summer when the aerial survey expedition of the Navy Department surveyed in a few weeks hundreds of square miles of difficult, mountainous, forest country. It is perhaps fair to say that the unexpected discovery of Lake Dorothy near Taku Arm as a hitherto unknown source of waterpower suitable for potential paper mills was alone worth the costs of the Alaskan aerial surveys.

For the company, then, that today finds the transportation of its executives and trained personnel from its headquarters to its plants, or between its plants, a time wasting process, the airplane affords an effective solution.

One of the most suitable planes for business purposes on Puget Sound, in British Columbia and in Alaska, is the flying boat, on the order of the six-place model manufactured by Boeing. Such a plane is capable of the high speed of 13 miles per hour, and is constructed for landing on water. The seats in its comfortable enclosed cabin may be removed for the transportation of cargo.

The cost of operating a plane of this type is approximately 25 cents per mile—an expense in which is included everything with the exception of depreciation. The cost includes the pilot for the plane. The flying boat is adaptable to every type of flying required: passenger transportation, freight and equipment transportation, timber cruising, aerial survey, and exploration. The mountains of the west include plenty of lakes on which the plane may land.

It is, however, only the large company with activities having many ramifications that can profitably make use of a private airplane.

On the Pacific Coast air transportation of passengers over established routes is attracting a great deal of business traffic. A San Francisco executive may board a Pacific Air Transport mail-passenger plane at the Oakland airport in the early morning and arrive in Seattle before noon, can continue on to an outlying mill during the luncheon hour. The same executive may board an 18-passenger tri-motored transport at the Oakland airport and 20 hours later step out of the plane at the Chicago airport, 2000 miles across the continent. Thus, for the company which does not own an airplane, yet places a high value upon the time of its executives, established air transportation services solve many problems of rapid transportation,—for long distance, or short distance as well.

The air mail service is the third influence of the airplane upon business in this nation. Air mail planes fly 90,000 miles daily in this country over a network of airlines that links the major cities of most of the states of the Union. Air mail letters are transmitted from the Pacific seaboard to the Atlantic coast with the loss of only one business day. Overnight delivery is made between cities as distant as 1200 miles. With dependability now fairly established as a characteristic of the air mail service, a company's affairs may be considerably expedited by this rapid transmission of business correspondence.

Commercial aviation is now definitely established on a solid foundation in this country, and the airplane has assumed a vital position in our national system of transportation and communication. It is steadily increasing in importance as a tool of American business.

Calkins Joins B. M. & T.

L. C. Calkins, a well known Eastern and Middle Western paper man, has joined the San Francisco division headquarters of Blake, Moffitt & Towne. Prior to 1911 Mr. Calkins was with the Butler Paper Co., Chicago. Upon leaving that firm he became associated with the

L. C. CALKINS

McClellan Paper Co., St. Paul, Minneapolis and Duluth. Mr. Calkins was secretary and sales manager of the McClellan Paper Co. He has spent about 25 years in the paper business and has come to sunny California to put in 25 more, he says.

Fibreboard Mill Manager Resigns

Charles Myers has resigned from active management of the Port Angeles, Wash., mill of Fibreboard Products, Inc., and J. B. Martin, Jr., has been appointed to take his place with Robert Bundy as assistant manager. Mr. Myers, who has been manager of the mill for eleven years, has just returned from a visit in Illinois and Indiana, having purchased a large farm near Muncie, Indiana, where Mr. and Mrs. Meyers plan to make their home part of each year.

Homer Peckham has resigned as superintendent of the Fibreboard Products, Inc., mill at Port Angeles and will be succeeded by C. V. Bascom. Illness necessitated Mr. Peckham's retirement after twenty-six years with the Paraffine Companies and Fibreboard Products, Inc.

Portland Box Makers Golf

Members of the Portland Box Makers Association have transferred their weekly meeting place from a downtown hotel to a local country club. A 9-hole golf game forms an important feature of the conference, which is preceded by a noon luncheon.

Honors on the greens are being carried off by Louis Milbrant of the Pacific Paper Box Factory and Walter Simpson of the Simpson Paper Box Co., it is reported.

The organization does not plan to return to their indoor headquarters until the winter season sets in.

HOOKER CHEMICALS

..of the Highest Quality...

HOOKER HE CO ELECTROCHEMICAL

Every product, every process has originated in or passed thru our Research Department. We are justly proud of this painstaking care in development and production. It guarantees you Hooker Chemicals of the Highest Quality.

With plants conveniently located and our policy of carrying ample stocks of materials on hand at all times, we are prepared to make prompt and efficient deliveries to all sections of the country.

HOOKER CHEMICALS

Caustic Soda
Liquid Chlorine
Bleaching Powder
Muriatic Acid
Monochlorbenzene
Paradichlorbenzene
Benzoate of Soda
Benzoic Acid
Benzoyl Chloride
Benzyl Alcohol
Antimony Trichloride
Ferric Chloride
Sulphur Monochloride
Sulphur Dichloride
Sulphuryl Chloride
Salt

HOOKER ELECTROCHEMICAL CO.

WESTERN
Plant—Tacoma, Washington
Sales Office—Tacoma, Washington

EASTERN
Plant—Niagara Falls, N. Y.
Sales Office—25 Pine St., New York City

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When writing to HOOKER ELECTROCHEMICAL CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY

New Types
New Models
New Machines

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

New Dealers
New Branches
Appointments

Willamette Ships Big Flat Screen Order

The Willamette Iron & Steel Works of Portland, Ore., recently completed the shipment of 56 14-plate Appleton type flat screens with Witham type vats and fasteners to the Olympic Forest Products Co. at Port Angeles, Wash.

The arrangement of the flowboxes and the methods used in the manufacture were a decided improvement over the screens built previously. These screens were equipped with the Willamette type of roller cam follower. The adjustable features of this follower and the construction of it should make for increased production. The screens were built with an incline. Each line of four screens was entirely and completely set up and fitted with vats, flowboxes, couplings and operated at the Willamette plant before shipment. By this arrangement a minimum amount of work is necessary after receipt of screens at destination.

Some further arrangements have been made by the Willamette Iron & Steel Works to manufacture pulp machinery on the Pacific Coast for Eastern concerns which will be announced later. It is the intention of the Willamette company rapidly to expand their line of paper and pulp machinery so that the major equipment of these plants may be built locally.

Weill Wends Westward Wunceagain

William Weill, manager of the Pacific Coast Supply Co. recently returned from a trip East where he spent two weeks at the plant of F. C. Huyck & Sons, Albany, New York, manufacturers of woolen felts, a week at the plant of the Eastwood Wire Corp., Belleville, New Jersey, and a week at the mines of the Texas Gulf Sulphur Co. at Gulf and New Gulf, Texas.

John M. Fulton has recently been transferred from the Portland office of the Pacific Coast Supply Co. to San Francisco. T. V. Normoyle, formerly with the Standard Oil Co., is now in charge of the Portland office.

Mr. Weill announces removal of the Seattle office of the company from 2305 Smith Tower to 1306-7 Smith Tower, effective April 1.

New Drier at Newberg

Work on the new drier building for the Spaulding Pulp & Paper Co., at Newberg, Ore., was completed last month. Heater units and fans are being installed and the frame works for the drying machine are undergoing fabrication. It is expected that the new unit will be ready for operation by June 1.

John Waldron Issues New Booklet

The John Waldron Corporation of New Brunswick, N. J., has issued Bulletin No. 107 on the Waldron Automatic Web Guide. The device described has its merits in securing straight-edged rolls and thus eliminating wasteful trim. It also can be applied to guiding wires.

Drying Handmade Sheets

It is obvious that if handmade sheets are to be used as a means for the preliminary determination of the quality of pulp and paper stock that the preparation of these samples should follow closely the same conditions as in making paper regularly on the large machine. For example, where rosin size is used, an air dried handmade sheet gives information of very little value, as it is well known that heat is essential to the proper functioning of rosin sizing in paper.

The ordinary flat dryer plate as commonly used in drying handmade sheets, has been found most unsatisfactory as it in nowise duplicates actual machine conditions. If a cover plate is used over the sample, there is very little provision for the escape of moisture.

Further, it is essential that the sample sheet be clamped down flat in some manner upon the drying surface, otherwise the sheet will be more or less cockled and uneven.

It is impossible to stretch a canvas or a screen cover with even pressure, over the sample on a flat drying plate. For, while it may be possible to clamp the edges down, the center of the sheet will not receive the same pressure as the outside. The Williams Apparatus Co. has recently developed a new drying outfit for handmade sheets which practically duplicates the conditions under which paper is dried by passing over the dryers of a paper machine.

The top drying surface is the curved arc of a 30-inch dryer.

The wet sample to be dried is laid upon this polished copper surface, a cover of dryer canvas is stretched down tightly over it and clamped under any desired tension.

A large drying area is provided, approximately 20 x 20 inch, sufficient for drying four 8 x 8 inch sheets at one time.

This electric dryer is provided with an accurate thermostat control by which the temperature may be regulated and maintained at any desired drying heat.

Due to the ready passage of moisture thru the canvas, the sample is not only dried very quickly but perfectly flat.

New Engineer at Camas Mill

T. L. Harreschou of Vancouver, Washington, has been employed by the Crown Willamette Paper Co. as steam engineer at its Camas, Washington, plant.

At present Mr. Harreschou is assistant to O. T. De Fieux of the company's Portland office.

PRODUCTION OF BOXBOARD

JANUARY, 1930

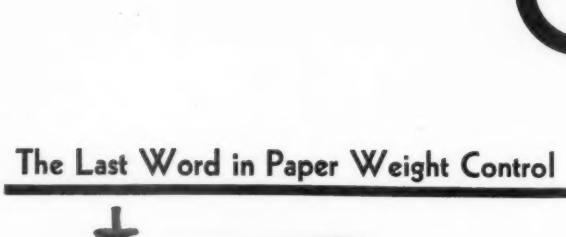
Unit—Short Tons

Based on Reports to the U. S. Department of Commerce

	Production	Per Cent of Capacity	New Orders	Unfilled Orders End of Month	Stocks End of Month
January, 1930	226,910	73.8	226,824	63,349	62,685
December, 1929	186,683	63.2	174,717	59,721	65,178
January, 1929	248,290	80.8	241,086	87,974	56,804

If It's BAKERMADE—Eventually it Costs Less

The Last Word in Paper Weight Control



The No. 3 Automatic STOCK REGULATOR

(FEENEY PATENT)

. . . in these days of increasing competition . . . of more exacting paper-trade . . . demanding better quality . . . more uniform weight . . . days of lessening sales margins . . . a mill is put squarely on its toes. The plain moral is you cannot let up and keep up.

Guaranteed to deliver uniform weight paper regardless of grade, consistency or speed of stock

Readily adjustable to capacity or weight desired

No springs, No float interference

100 per cent accessible for cleaning

Extra heavy ball bearings throughout

Inexpensive to install

Your present piping will do

Eliminates off weight

Eliminates splicing

Reduces cost » Adds profit

Installed on 60 Days Trial

The Baker Corporation

SINCE 1881

Saratoga Springs, N. Y.

— Where Quality Is Institutional —

When writing BAKER MANUFACTURING CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY

Canada: Exports of Pulp and Paper February, 1930

Canada's exports of pulp and paper in February were valued at $13,547,933, according to the report issued by the Canadian Pulp and Paper Association. This was a decline of $2,458,409 from the previous month and was less than the total for February 1929 by $852,009.

Exports of wood-pulp for the month were valued at $3,567,070 and exports of paper at $9,980,863 as compared with $3,923,584 and $12,082,758 respectively in January, there being a decrease of $356,514 in the value of wood pulp exported and of $2,101,895 in the value of paper exports.

Details of the various grades for the month were as follows:

	February, 1930		February, 1929	
PULP—	Tons	Dollars	Tons	Dollars
Mechanical	14,775	435,126	9,927	276,333
Sulphite Bleached	24,816	1,816,782	20,758	1,598,373
Sulphite Unbleached	14,937	751,669	14,427	712,662
Sulphate	9,446	521,789	9,682	582,584
Screenings	2,537	42,704	1,343	28,876
	66,511	3,567,070	56,137	3,198,828
PAPER—				
Newsprint	163,204	9,418,742	174,469	10,615,726
Wrapping	1,434	151,041	1,665	187,762
Book (cwts.)	4,041	37,336	7,944	59,438
Writing (cwts.)	215	3,084	1,039	8,596
All Other	.....	370,660	.....	329,592
		9,980,863		11,201,114

For the first two months of the year the exports of pulp and paper were valued at $29,554,275 as compared with $30,536,140 in the first two months of 1929.

Wood-pulp exports for the two months amounted to $7,490,654 and exports of paper to $22,063,621 as against $6,843,982 and $23,692,158 respectively in the corresponding two months of 1929.

Details for the various grades of pulp and paper for the first two months of 1930 and 1929 are as follows:

	Two Months, 1930		Two Months, 1929	
PULP—	Tons	Dollars	Tons	Dollars
Mechanical	36,595	1,085,822	26,698	696,395
Sulphite Bleached	46,435	3,497,412	44,086	3,372,286
Sulphite Unbleached	34,993	1,744,771	29,017	1,445,108
Sulphate	19,050	1,078,298	20,988	1,258,253
Screenings	4,748	84,351	3,530	71,940
	141,821	7,490,654	124,319	6,843,982
PAPER—				
Newsprint	362,977	21,028,668	369,516	22,589,341
Wrapping	2,633	279,317	2,923	320,600
Book (cwts.)	8,081	70,328	13,461	108,585
Writing (cwts.)	321	3,801	1,060	9,336
All Other	.....	681,507	.....	664,296
		22,063,621		23,692,158

Exports of pulpwood for the first two months of the year amounted to 258,336 cords valued at $2,400,358 which was an increase over the two months of 1929 when the total was 192,549 cords valued at $1,732,992.

Jim Lovett Retires

James P. Lovett has retired from his position as general superintendent of the West Linn division of Crown Willamette Paper Co. Mr. Lovett has been an active factor in the big plant by the falls of Willamette for almost four decades. When the plant was owned by the Willamette Pulp & Paper Co., Mr. Lovett was sulphite mill foreman supervising the erection of the chemical unit. Later he had general charge of groundwood operations assuming the general superintendency when the late William Sheahan left to go East to St. Regis Paper Co.

C. L. Burton, who headed the C. L. Burton Corporation in Portland, with offices in connection with the Willapa Pulp & Paper Mills in the Pacific Building, closed his offices last month. He is believed to have gone to Chicago. Mr. Burton became fiscal agent for the Willapa company shortly after its organization.

The Foreign Market

IN NORWAY—Papier-Journalen for February 15, 1930, reports that the market is relatively quiet and the general situation quite unchanged. The fire that took place at the Skotfos mill belonging to the Union Co. will only cause a short stoppage.

IN SWEDEN—With the exception of a few comparatively large sales of Strong Sulphate Pulp, the sales during the last two weeks were limited.

A few sales of Kraft Pulp made during the last two weeks have created quite a sensation. Although about 15,000 tons of such pulp appear to have been sold under 2-3 contracts for the American market at $2.25 ex dock. The buyers, it is said, are American board mills. This price should not be subjected to a direct comparison with the prices of $2.40-$2.45 at which a number of substantial sales were made in December, for those were for different brands.

With regard to the new labor agreement in the Swedish paper industry, the situation appears to have brightened somewhat. After repeated interruptions the negotiations were resumed at the call of the special commission of mediators appointed by the government. After lengthy and energetic negotiations, which continued during six days, the commission succeeded on the 10th day of February in producing a tentative agreement, which received the support of the delegates on both sides. This agreement is now being considered and voted on by both parties. Swedish Paper Journal, February 15, 1930.

FINLAND—The paper market continues to be quiet and in some lines such as wrapping paper and fine papers, appears to be depressed. Wood pulp markets are quiet, although it has recently been reported in the press that negotiations about considerable contracts are in progress with Soviet Russia. Finnish Pulp and Paper Journal for February 15, 1930.

Paper Production and Sales in Japan

January, 1930

	Production Pounds	Sales Pounds
Printing paper (superior quality)	13,806,811	14,097,175
Printing paper	9,746,332	10,295,857
Writing and Drawing	2,013,273	2,516,169
Imitation paper	10,682,829	7,949,764
Art paper	2,058,235	1,683,420
News paper	47,779,780	42,506,621
Sulphite paper	1,646,352	1,844,017
Color paper	1,225,163	1,168,047
Packing paper	10,870,256	9,930,145
Chinese paper	2,065,016	2,614,364
Cardboard	6,525,049	5,140,205
Sundries	5,336,948	5,197,050
Total	**113,756,044**	**104,942,834**

Wood Pulp Imported by Japan

January, 1930

From—	Chemical Pounds	Mechanical Pounds
Poland	.....	239,733
England	115,734	.....
U. S. A.	617,867	.....
Germany	366,933	.....
Sweden	1,437,333	.....
Norway	3,616,933	.....
Canada	7,886,000	.....
France	287,467	.....
Sundries	531,600	.....
	14,859,867	239,733
Total Imports of Wood Pulp	**15,099,600 Lbs.**	

McMaster On News Print Service Bureau

During his recent trip east to attend the Canadian Pulp & Paper Association's convention and make a first hand study of the eastern newsprint situation, A. E. McMaster, general manager of the Powell River Co., Ltd., was appointed vice president of the Newsprint Service Bureau. He will serve with J. A. Bothwell, Brompton Pulp & Paper Company; J. L. Apedale, Price Bros.; W. H. Smith, Abitibi Power & Paper Company, and A. R. Graustein, International Paper Company, all commanding figures in the pulp and paper world.

Jack Johnson at Camas

Jack Johnson, who left the Hawley Pulp & Paper Co. about a year ago where he was assistant chief papermaker, has assumed a similar position at Camas.

PACIFIC COAST PAPER EXPORTS—JANUARY, 1930

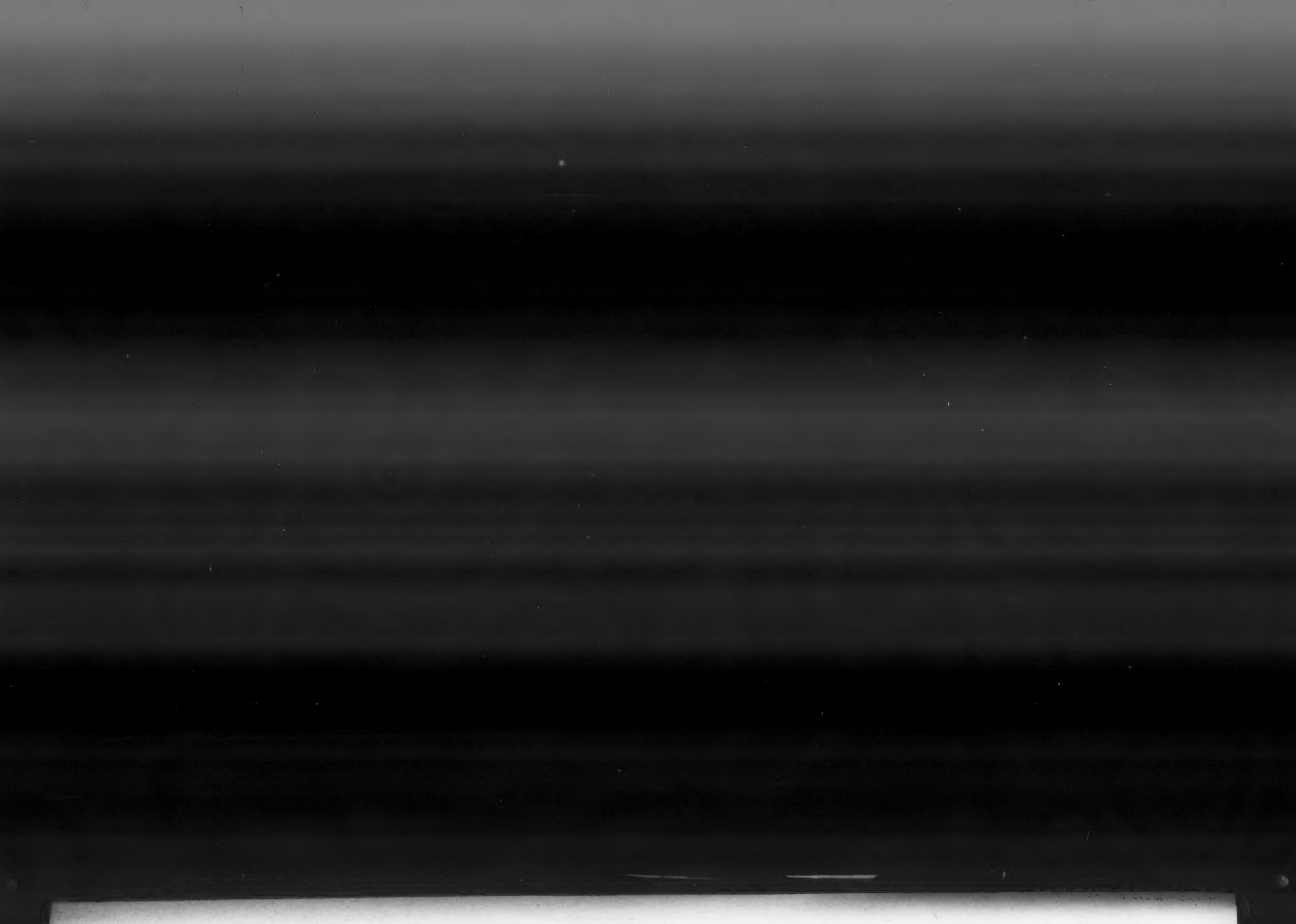
	Newsprint		Printing		Writing		Greaseproof		Wrapping		Tissue	
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
From LOS ANGELES—												
To Mexico			36	8	592	188	287	49	7,075	456	11,193	1,439
To Philippines					382	24	514	150				
To Australia											87,919	6,010
From SAN FRANCISCO—												
To Philippines	104,070	3,466			72	11	220	35	82,306	3,964	6,627	705
To French Oceania	160	12			65	45			2,334	142	121	12
To Central America	68,124	2,222			47,767	2,500	250	45	9,079	676	843	125
To Cuba	6,475	253							25,007	1,537		
To South America	74,425	2,416					3,612	471	9,195	521	310	42
To China	7,951	276			158	104	4,497	664			3,832	426
To Australia			48	8	120	35	70	25			3,380	320
To Canada			853	108	625	222						
To Orient									1,640	186	707	106
To Japan					126	104			782	73	776	127
To Mexico											6,528	99
To British Oceania											202	16
From OREGON—												
To Philippines	622,231	21,725			363,535	17,003			579,164	12,653	10,468	820
To South America	280,155	9,803							13,093	691		
To Central America			2,715	132								
To Australia			97,324	5,374	76,618	3,746						
To China					92,378	4,612			163,701	6,949		
From WASHINGTON—												
To Philippines	96,738	2,873	354,679	19,385			500	725	22,268	1,050	34,671	2,740
To Canada			96,119	7,164	3,837	1,204	7,719	702	165,170	7,601	25,364	2,321
To China			1,691,485	393,640	285	35			1,054	14		
To Australia			106,968	5,367	11,920	675						
To Japan					104	27						
Pacific Coast Total	1,260,329	43,046	2,350,227	431,186	598,584	30,535	17,669	2,866	1,081,868	36,513	192,941	15,308

	Board		Building		Boxes & Cartons		Paper Bags		Converted Paper Products		Miscellaneous Paper & Prod.
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Dollars
From LOS ANGELES—											
To Mexico			1,883	84	12	1	414	44	240	62	277
To Japan			32,000	800							
To Australia			59,810	1,839							
To South America											80
To Orient											20
To Philippines											306
From SAN FRANCISCO—											
To Australia	77,343	2,217	99,453	3,666			5,732	965	4,109	413	7,661
To China	1,815,097	36,395	52,985	1,205	2,108	99	930	38	158	76	530
To Central America	476	162	180	5	4,890	301	89,130	5,036	1,594	754	761
To Orient	283,419	6,346	195,000	7,871	280	18			361	237	41
To South America	5,348	1,010	26,000	880			119,239	7,390	1,151	758	42
To Philippines	1,225	928	6,600	209	12,939	739			485	225	347
To South Africa			12,125	391							
To Japan			39,000	1,214					100	76	368
To Norway					232	28					
To Mexico									64	56	96
To United Kingdom									100	57	5
To Canada											399
From OREGON—											
To China	1,258,138	26,477			9,353	898					
To Australia	532,578	16,230									47
To Central America							7,381	467			
To South America							1,501	121			
To Philippines							38,407	2,099	1,700	120	
From WASHINGTON—											
To Canada	174,020	7,667			312	50	15,320	1,628	3,141	578	4,559
To China	49,979	1,650			400	42			6	1	225
To Japan	760	137									485
To Australia	276,030	8,695									5
To Philippines					120	36			556	169	5,068
Pacific Coast Total	4,474,413	107,914	525,036	18,164	30,646	2,212	278,054	17,788	13,765	3,582	21,322

Total All Paper Exports for January, 1930—$730,436.
Total All Paper Exports for January, 1929—$457,890.
Total All Paper Exports for December, 1929—$493,985.

Washington shipped the following wood pulp during the month of January, 1930: Sulphite—To United Kingdom, 1,016 tons, $41,025; to Argentina, 1,134 tons, $48,790; to Japan, 53 tons, $2,300. Other Wood Pulp to Canada, 251 tons, $1,950.

CLASSIFICATIONS—For convenience of presentation, some classifications have been combined, as follows: "printing," includes book (not coated), cover and surface coated paper; "greaseproof" includes waterproof; "tissues" includes crepe, tissue, paper towels, napkins and toilet; "board" includes boxboard, bristol, bristolboard and other paper board and strawboard; "building" includes sheathing, and other building paper; "writing" includes fancy papeteries and other writing; "converted paper products" includes envelopes, cash register rolls, index file and other office forms; "miscellaneous" includes blotters, paper hangings, vulcanized fibre sheets, strips, rods and tubes, manufactures of vulcanized fibre and other paper products. COUNTRIES—Under the classification "Central America" are included all of the Central American countries and Cuba. "South America" includes only the following South American countries: Ecuador, Paraguay, Bolivia, Uraguay, and the Guianas; other South American countries are classified separately. "Orient" includes all the Asiatic countries with the exception of China and Japan, which are separately classified. New Zealand is included under "Australia."



PROGRESS

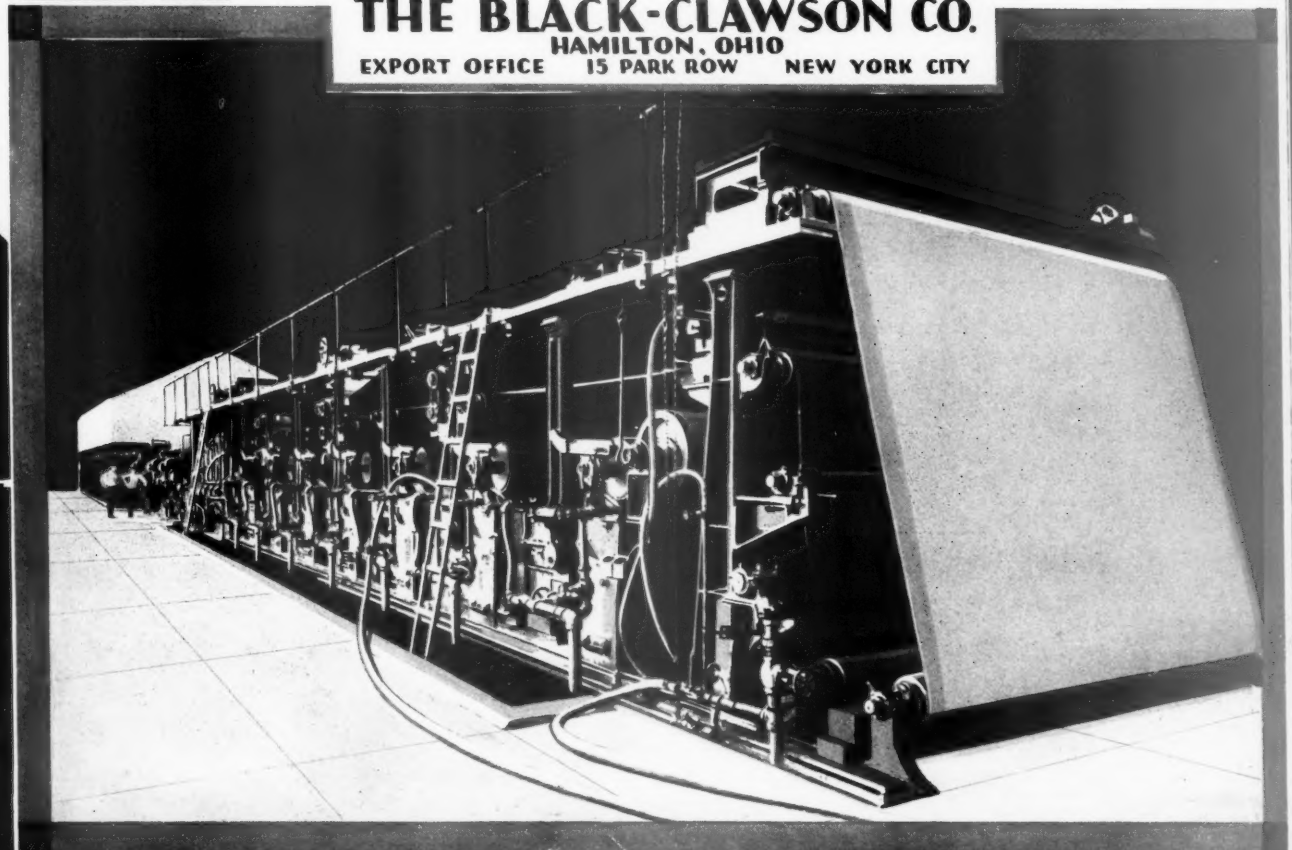
SETTING NEW STANDARDS IN DESIGN

The fabrication of a new watch, an electric motor, an airplane, means working to close limits—calls for skill of the highest order.

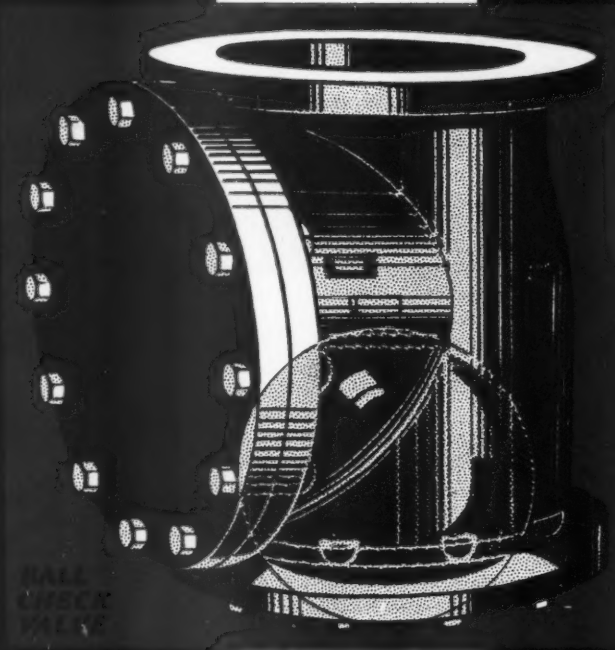
Nor, just because it is massive, can a paper machine hope to "render unto Caesar that which is Caesar's." It, too, must be designed along the latest lines, must be built with the utmost care. No other way can yesterday's standards be excelled, progress achieved.

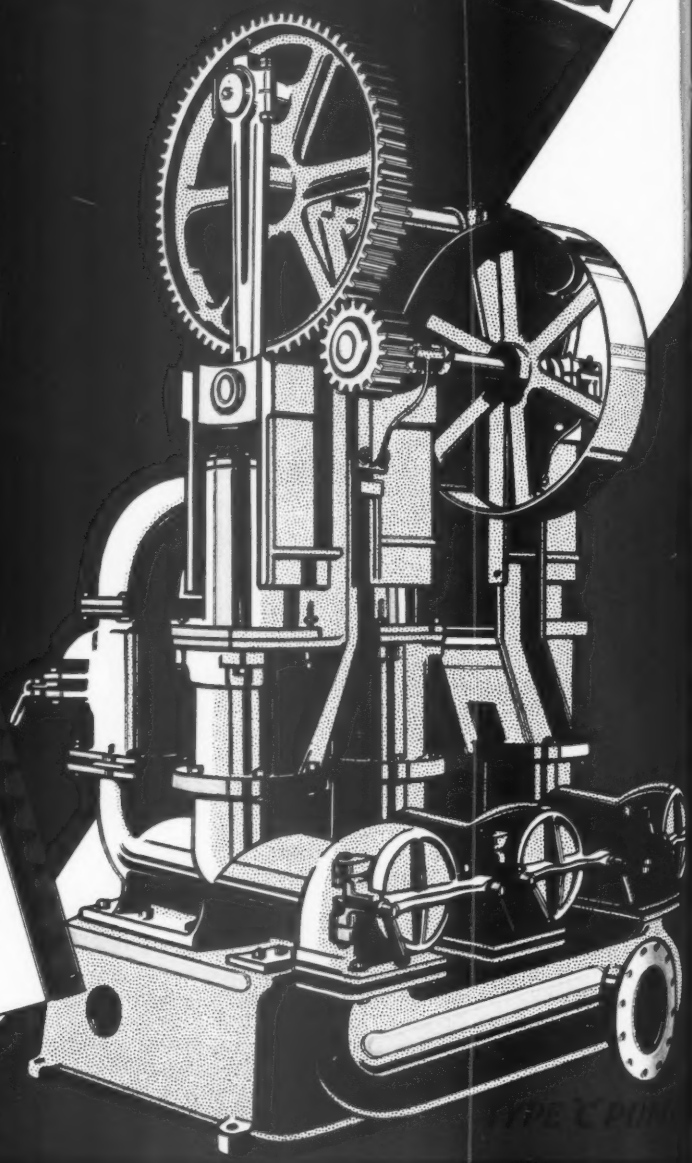
In the considered judgment of those who own it, the seven cylinder Black-Clawson machine shown below typifies the 1930 standard in design. Read the complete story in our February MESSENGER.

THE BLACK-CLAWSON CO.
HAMILTON, OHIO
EXPORT OFFICE 15 PARK ROW NEW YORK CITY



1300 STRONG





There are 1300 Shartle stuff pumps in the land. If you care to, take a swing around the country and count them.

You can also take this from us—that there wouldn't be 1300 Shartle pumps in use, if the Shartle wasn't the best buy in stuff pumps. It is hardly likely that so many mills would send to Shartle for pumps if they could do better by sending elsewhere.

When you want a pump come to "headquarters" for it

Export Office
15 Park Row
New York City

United States Pulp and Paper Production
January, 1930

According to identical mill reports to the American Paper and Pulp Association from members and cooperating organizations, paper production in January showed an increase of 16% over December 1929, and a decrease of 1% under January 1929.

The January production of paperboard, wrapping, bag and building papers, registered a decrease under January 1929 output. Uncoated book paper production showed an increase of 15%, writing 7%, hanging 3%, tissue 2%, and newsprint 1% over January 1929. Production of wrapping paper decreased in January 1930 as compared with January 1929, by 17%, bag paper 9%, paperboard 3%, and building paper 1%.

Shipments in January 1930, of wrapping, building, hanging, paperboard, and bag papers, increased over January, 1929, the total shipments being 1% below the total of 1929.

Newsprint, wrapping, writing and tissue papers registered decreases in inventory at the end of January 1930 as compared with the end of December 1929. As compared with January 1929 inventory, newsprint, wrapping, bag, and tissue papers showed decreases. The total stocks on hand for all grades was 2% above December 1929, and 3% below that of January 1929.

Identical pulp mill reports for January 1930 indicated that the total production of all grades of pulp was 2% less than January 1929.

During January 1930, 18% more mitscherlich, 9% more bleached sulphite, and 7% more soda pulp was consumed by reporting mills than in January 1929. The total shipments to outside markets of all grades of pulp in January 1930 were 5% below the total for January 1929.

All grades of pulp, excepting bleached sulphite, easy bleaching sulphite and kraft, showed decreases in inventory at the end of January as compared with the end of December 1929. As compared with January 1929, all grades, excepting bleached sulphite, easy bleaching sulphite and kraft pulp, registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JANUARY, 1930

GRADE	Production Tons	Shipments Tons	Stock on Hand End of Month—Tons
Newsprint	124,851	124,262	18,778
Book (Uncoated)	96,642	94,655	45,221
Paperboard	217,563	215,257	64,288
Wrapping	48,275	49,078	47,091
Bag	14,546	14,406	6,201
Writing	32,587	33,271	42,619
Tissue	12,820	13,089	8,506
Hanging	6,188	5,986	3,824
Felts and Building	5,724	4,600	4,262
Other Grades	24,459	23,379	18,939
Total—All Grades	583,655	577,983	259,729

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JANUARY, 1930

GRADE	Production Tons	Used During Month—Tons	Shipped During Month—Tons	Stocks on Hand End of Month—Tons
Groundwood	92,701	91,116	2,808	42,709
Sulphite News Grade	38,521	35,695	3,432	6,247
Sulphite Bleached	29,442	26,810	2,316	3,471
Sudphite Easy Bleaching	3,622	3,149	434	1,100
Sulphite Mitscherlich	7,153	6,502	972	843
Kraft Pulp	29,189	24,851	4,195	6,378
Soda Pulp	25,576	16,612	9,072	3,452
Pulp—Other Grades	48	.....	67	3
Total—All Grades	226,252	204,735	23,296	64,203

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES

JANUARY, 1930

Compiled by the U. S. Department of Commerce Bureau of Foreign and Domestic Commerce

(Figures Subject to Revision.)

PULP WOOD

	Rough				Peeled				Rossed			
	Spruce		Other		Spruce		Other		Spruce		Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
COUNTRIES—												
Canada	11,767	124,057	36	154	69,163	741,667	35,602	310,319	644	7,038	.....	.....
Total	11,767	124,057	36	154	69,163	741,667	35,602	310,319	644	7,038	.....	.....

Total Pulp Wood Imports for January, 1930—117,212 Cords: $1,183,235.

WOOD PULP

	Mechanically Ground		Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		All Other Wood Pulp	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES—												
Austria	.....	.....	.....	.....	245	17,319	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	.....	362	16,990	77	5,138	.....	.....	.....	.....	.....	.....
Finland	1,621	44,179	6,417	321,003	468	25,627	1,703	76,730	200	13,477	.....	.....
Germany	.....	.....	1,827	103,733	3,555	258,979	.....	.....	.....	.....	37	2,803
Lithuania	.....	.....	50	2,509	.....	.....	.....	.....	.....	.....	.....	.....
Norway	916	15,843	1,553	93,077	3,910	284,909	536	26,101	250	22,010	.....	.....
Poland and Danzig	.....	.....	303	13,758	.....	.....	11	4,380	.....	.....	.....	.....
Sweden	230	7,474	58,570	3,094,614	3,096	234,785	27,910	1,406,108	50	2,914	.....	.....
Yugoslavia and Albania	.....	.....	97	3,718	.....	.....	480	20,938	.....	.....	.....	.....
Canada	22,611	671,254	17,937	838,429	15,071	1,142,155	7,496	461,392	600	55,923	281	21,467
Total	25,378	738,750	87,116	4,487,831	26,422	1,968,912	38,136	1,995,649	1,100	94,324	318	24,270

Total Imports of All Grades of Pulp for January, 1930—178,470 tons; $9,309,736.

THERE must be some very good reason why eight or nine out of every ten mills use . . . .

SHELL MILL LUBRICANTS

International Looms On Coast Again

Lending strength to the report that International Paper Co. plans large scale development on the Pacific coast, it is announced that the company has applied to the British Columbia government for water rights on the Kokish River, northeastern Vancouver Island, so that it may be able to consolidate the waterpower available there with that of the Nimpkish River in one of the biggest hydro-electric projects on the British Columbia coast.

It is evident, however, that the International Paper Co. has no definite plans for construction of a mill in the immediate future. The present policy is to prepare for the Pacific coast expansion when it is required, however, and the elaborate manner in which its representatives are laying the groundwork for that expansion program now gives some hint of the extensive scale on which developments will eventually be based.

When International Paper Co. quietly took an option on the International Harvester Company's holdings on Vancouver Island some months ago it acquired not only the mill and equipment of the old Beaver Cove Timber & Pulp Co., but also approximately 2,000,000,000 feet of timber and the water rights previously obtained by the company at Nimpkish River.

These rights were originally obtained by the Canadian Forest Products, Ltd., which is the name taken by the company since the reorganization of the old Beaver Cove enterprise and the investment of the International Harvester funds in it. Since then, it is understood, but not confirmed, International Paper Co. has taken over the whole organization and is making preparations for greatly increasing the amount of waterpower available.

Hon. F. P. Burden, minister of lands in the provincial government, under whose jurisdiction come all waterpower and timber affairs, has replied to the International Paper Co., informing them that Kokish River is now under reserve and is not immediately available for any commercial purpose.

This status, however, is understood to be temporary and the provincial government at present has a survey party making an examination of the Kokish power resources. Mr. Burden has informed the International Paper Co. that it may make an examination on its own account so that it may make formal application for the power resources there at some future date, and it is understood that International engineers are now carrying on an independent survey.

International will be allowed an equal opportunity with all other applicants in petitioning for the Kokish River, this having been the practice adopted by the government with respect to Campbell River, Nimpkish River, Lois River, Pend Oreille and other similar waterpower disputes during the last two or three years.

PACIFIC COAST PULP IMPORTS—DECEMBER, 1929

	Pulpwood		Mechanically Ground Pulp		Bleached Sulphite		Unbleached Sulphite		Unbleached Sulphate	
	Dollars	Cords	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons
To LOS ANGELES—										
From Sweden							85,115	1,592	40,980	1,000
To SAN FRANCISCO—										
From Finland			9,369	466						
From Canada							9,005	198	3,843	168
To WASHINGTON—										
From Canada	2,742	559			17,781	273	4,721	96		
Pacific Coast Total	2,742	559	9,369	466	17,781	273	98,837	1,886	44,823	1,168

Total Imports Pulp Wood and Wood Pulp for December, 1929—$173,552.

Paper Base Stocks entering Pacific Coast Customs Districts during December, 1929, were as follows: To Los Angeles, from Belgium, $11,894; France, $3,088; Germany, $1,629; Italy, $706; Japan, $15,827. To San Francisco, from Germany, $4,636; China, $3,472; Japan, $85,431; United Kingdom, $450; New Zealand, $1,334. To Oregon, from Japan, $99. To Washington, from Canada, $8,785; Japan, $2,084. Total, $139,435.

PACIFIC COAST PAPER IMPORTS—DECEMBER, 1929

	Newsprint		Printing Papers		Writing & Drawing		Greaseproof		Wrapping		All Other Paper
	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
To LOS ANGELES—											
From Finland	298	9,675									
From Norway	33,937	1,225,998									
From Sweden	80,629	3,106,559							2,737	67,971	
From Canada	256,011	8,293,647									20
From China					6	10					33
From Japan					139	360					1,476
From Orient					19	55					98
From Mexico											3
From Europe					1,203	1,967					6,566
To SAN FRANCISCO—											
From Sweden	83,859	3,214,334	6,379	167,833							
From Canada	196,465	6,320,098									
From China			38	205	9	32					10,156
From Japan					412	727					4,833
From Orient					112	779			24	300	1,235
From Europe					852	378					19,163
To OREGON—											
From Japan									31	55	77
From Europe					329	584					737
To WASHINGTON—											
From Canada	423,816	13,019,036			25	70					937
From China											176
From Japan					45	111			25	30	7,484
From Orient					6	5					15
From Europe					71	98					857
Pacific Coast Total	1,075,015	35,189,347	6,417	168,038	3,228	5,176			2,817	68,356	53,886

Total Imports of All Paper and Paper Products, December, 1929—$1,141,363.

NEW

KENWOOD

WOOL PRODUCTS

REG. U. S. PAT. OFF.

The new Kenwood Board Felts—Tops, Bottoms, Presses—have, in the past six months, fully demonstrated their sound economy. Based on actual "felt cost per ton" figures, these felts show a decided factor of surplus service.

Kenwood pioneered the one-sided board felt. Kenwood developed and perfected the Kenwood patented Tanning Process. Progressive, scientific development has produced in the NEW Kenwood Board Felts the third major contribution to felt economy.

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, N. Y.

KENWOOD MILLS LTD., ARNPRIOR, ONTARIO, CANADA

KENWOOD FELTS

News Print Production in North America
February, 1930

Production in Canada during February 1930 amounted to 189,154 tons and shipments to 178,691 tons. Production in the United States was 112,394 tons and shipments 110,714 tons, making a total United States and Canadian news print production of 301,548 tons and shipments of 289,405 tons. During February, 21,098 tons of news print were made in Newfoundland and 1,648 tons in Mexico, so that the total North American production for the month amounted to 324,294 tons.

The Canadian mills produced 5,763 tons less in the first two months of 1930 than in the first two months of 1929, which was a decrease of 1 per cent. The United States output was 9,779 tons or 4 per cent more than for the first two months of 1929. Production in Newfoundland was 4,930 tons or 13 per cent more in the first two months of 1930 than in 1929 and in Mexico 127 tons more, making a total increase of 9,073 tons or 1 per cent over the same period in 1929.

During February the Canadian mills operated at 69.0 per cent of rated capacity, United States mills at 86.2 per cent and Newfoundland mills at 95.4 per cent. Stocks of news print paper at Canadian mills totalled 39,598 tons at the end of February and at United States mills 20,552 tons, making a combined total of 60,150 tons which was equivalent to 3.6 days' average production.

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundland	Mexico	Total
1930—February	189,154	112,394	21,098	1,648	324,294
Two Months	396,109	237,245	44,361	3,376	681,091
1929—Two Months	401,872	227,466	39,431	3,249	672,018
1928—Two Months	376,546	231,827	34,984	2,809	646,166
1927—Two Months	313,710	255,348	31,803	2,189	603,050
1926—Two Months	275,351	269,691	26,545	1,916	573,503
1925—Two Months	237,414	243,710	10,498	1,866	493,488
1924—Two Months	222,847	250,916	11,077	1,916	486,756
1923—Two Months	191,523	242,063	10,467	2,000	446,053

SHIPMENTS OF OVERISSUE NEWSPAPER

From Pacific Coast Customs Districts—January, 1930

From Los Angeles	Pounds	Dollars
To China	2,793,601	24,041
To Java	6,800	165
To Hong Kong	520,800	4,782
To Japan	99,960	900
To Philippines	1,362,420	14,835
Total	4,783,581	44,723
From San Francisco		
To French Oceana	500	7
To Nicaragua	23,000	306
Total	23,500	313
From Oregon		
To China	336,000	2,772
From Washington		
To Canada	8,461	306
Pacific Coast Total	5,151,542	48,114

Sulphite Superintendent, 40 years of age, twenty years' experience in the manufacturing of high grade sulphite, sixteen years with present employers. Wishes mill connection on West Coast.

Address Reply: Box 101
PACIFIC PULP & PAPER INDUSTRY
71 Columbia St., Seattle, Wash.

ASSURE
a Favorable Verdict!

YOUR inspectors must accept or reject paper on its merits---

But you can assure a favorable verdict by controlling the processes which determine its quality!

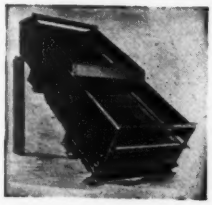
The formation of the sheet on the Fourdrinier machine is especially important---whatever happens here determines the basic structure of the sheet and this cannot be changed by later operations!

Assure the high quality of your paper by clothing your machines with dependable Tyler Fourdrinier Wires.

Tyler wires run straight and true---they assure the uniform dewatering and even deposition of pulp---they give long, dependable service!

TYLER WIRES

for screening WOOD CHIPS



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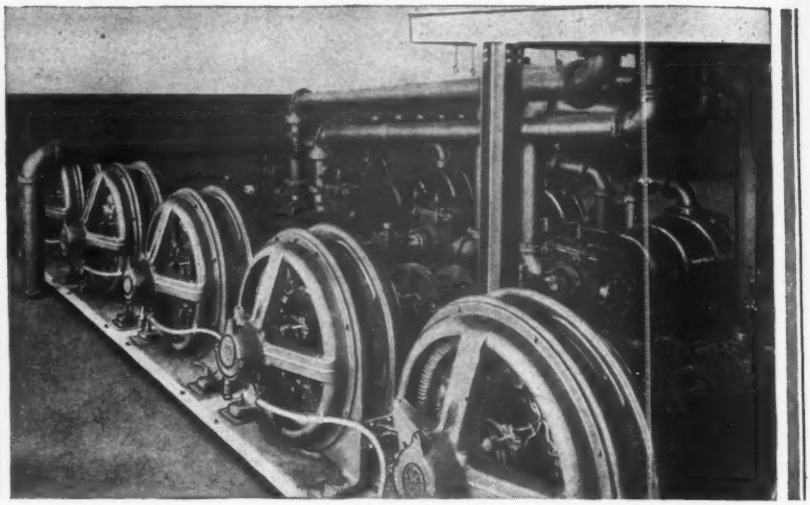
The W. S. TYLER COMPANY
CLEVELAND, OHIO



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Synchronous motors are admirably adapted to driving—

Grinders
Beaters
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and motor–generator sets of course.

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Yes, by all means put synchronous motors on your Jordans, for here is an application built to order. The proper speed for direct connection—no side pull on bearings—good big air gaps—high efficiency at all loads, and profitable power-factor improvement on your mill department feeders.

When placing synchronous motors on Jordans, or on your other paper-making machines, specify G-E synchronous motors. Why G-E? Because General Electric synchronous motors represent the utmost in dependability, gained through exact design and manufacture. You will appreciate a reputation that is built on hundreds of successful installations.

Put your motor problem up to the paper-mill specialist in the nearest G-E office. He will gladly consider it with you.

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SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Hawaiian Cellulose Plant In Prospect

Formation of a $1,500,000 corporation to acquire Hawaii Cellulose, Ltd., organized at Hilo in the fall of 1928 for the manufacture of wallboard and other products from bagasse, is under consideration by a group of Honolulu individuals and sugar plantation agencies.

Those interested in the formation of the new concern are T. H. Davies & Co., Alexander & Baldwin, Castle & Cooke, Walter F. Dillingham, president of the Oahu Railway & Land Co., and mainland interests said to be in Los Angeles.

It is understood the manufacturing plant, with equipment, would cost approximately $750,000.

Hawaii Cellulose, Ltd., was incorporated originally for the manufacture of insulated wallboard from bagasse, which is the refuse remaining after the juice has been extracted from sugar cane. It also proposed to conduct extensive research work to determine what other products might profitably be manufactured, such as paper pulp, various grades of paper and rayon, or artificial silk.

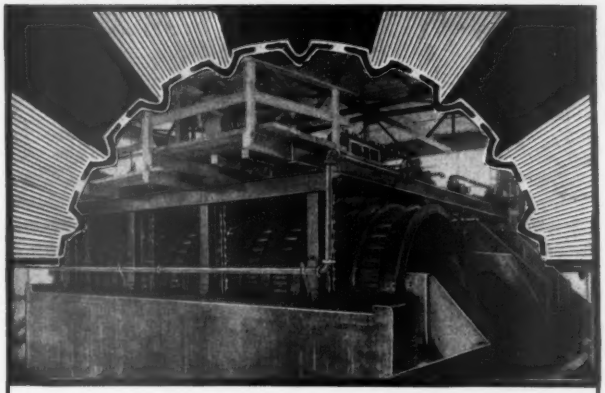
Similar objectives would be pursued by the proposed new corporation, it is said, including the shipment of bagasse to mainland and other markets.

Hawaii Cellulose, Ltd., filed incorporation papers October 15, 1928. Initial capital was $10,000, and the capital limit was placed at $5,000,000. The original officers are Frank H. West, president; W. L. S. Williams, vice president; William H. Hill, treasurer, and J. W. Russell, secretary. These, with M. T. Williams, constituted the board of directors.

Colorado Pulp Wood Offered for Sale

The United States Forest Service has offered for sale to the highest bidder 2,000,000 cords of pulpwood in southern Colorado. Over a million cords of Engleman and bluespruce and 215,000 cords of white and alpine fir are on the watershed of the south Rio Grande and 800,000 cords of spruce and fir are on the upper Piedra watershed.

Altho the cutting of these tracts will increase the annual cut in the Colorado forests 50% it will still be far below the permissable cut to equal the annual growth. Representatives from eastern mills were in the vicinity a year ago studying the advisability of establishing pulp mills on the ground. At the time they were mainly concerned with purchasing private tracts of timber. The offer of the government may revive the question now.



IS YOUR BARKING CAPACITY

GUARANTEED?

The U-Bar Barking Drum is guaranteed for two years at a minimum speed of 7½ R.P.M. (10 ft. diam.) running half-full of wood at an average of 3,000 working hours per year. This is all in addition to the usual guarantee of workmanship and materials.

HOW THE U-BAR GUARANTEE INSURES

BIG PRODUCTION

This guarantee insures BIG and sustained production. Three factors govern capacity: Interior Surface, Volume and Speed. Examine the U-BAR Drum from these angles:

1. *Interior Surface:* U-BARS bark more quickly and cleanly with no unnecessary loss of wood fibre.
2. *Volume:* You can keep a U-BAR Drum HALF-FULL of slabs or logs all the time—a 10'x30' U-BAR Drum, for instance, carries a working load of *five cords* of wood. Think of it!
3. *Speed:* 7½ R.P.M. are guaranteed in the U-BAR Drum and many mills increase their capacity greatly by stepping this up to 10 R.P.M. Speed is important.

When you consider barking drums, insist on a capacity guarantee.

THE MORTERUD SYSTEM

Production records of the Union Bag and Paper Mills attest to the efficiency of the Morterud System of Indirect Soda and Sulphate cooking. It produces an *even cook* and a greater yield with forced circulation of preheated liquor. Steam is not introduced directly into the digester but circulates through a series of seamless steel pipes and the condensed water is pumped back to the boilers. Therefore there is *no dilution* in digester and less steam is used in the evaporation of liquor.

THE GIANT NEKOOSA BARK PRESS

Make a steam generating asset out of your bark disposal problem with this wonderful Bark Press. It reduces the water in bark to 55% bone dry—which is almost natural water content. Simple operation. Strong and rugged construction. Surprisingly great economies result from the use of this machine.

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Fibre Making Processes, Inc.

CHICAGO, U. S. A.

Canadian Barking Drum Co., Ltd., Drummond Bldg., Montreal

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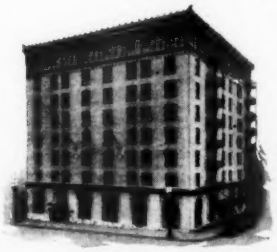
The stopping place in Portland for Pulp and Paper Men.



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Convenient Downtown Location.
Reasonable Rates Prevail.

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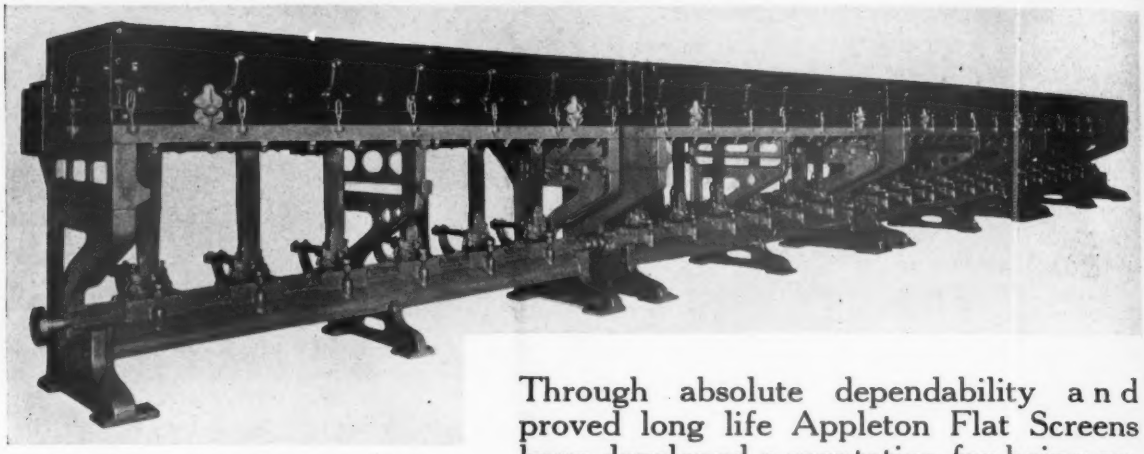

Four 12-plate Appleton Flat Screens built on the Pacific Coast

Through absolute dependability and proved long life Appleton Flat Screens have developed a reputation for being extremely fine screens. In the modern Appleton Flat Screen, Appleton standards of construction and design are continued in a modern flat screen built for efficient operation and extra years of service.

Appleton Flat Screens

Sold on the Pacific Coast by the
PAPER MILL EQUIPMENT COMPANY
Northwestern Bank Building, Portland, Oregon

The APPLETON MACHINE COMPANY
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Appleton Equipment is built on the Pacific Coast by the WILLAMETTE IRON & STEEL WORKS, Portland, Oregon

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Three Western Gear Herringbone drives, each of different ratio and capacity, are installed for a specific service.

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In this modern era of mechanization new problems in power transmission through gears arise almost daily. This is particularly true of the pulp and paper mills, wherein special machinery operated by special drives has so often been directly responsible for lowered production costs.

WESTERN engineers, through close association with plant superintendents, engineers and operators in the paper industry, have acquired an intimate knowledge of these special requirements and are particularly well fitted to handle any problems that arise. This experience, with plant facilities located in the heart of the industry, is offered as an important counterpart to the high quality of WESTERN gears.

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